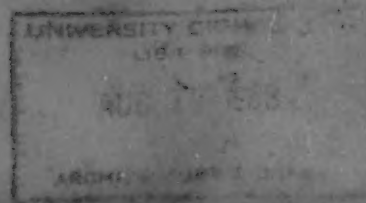
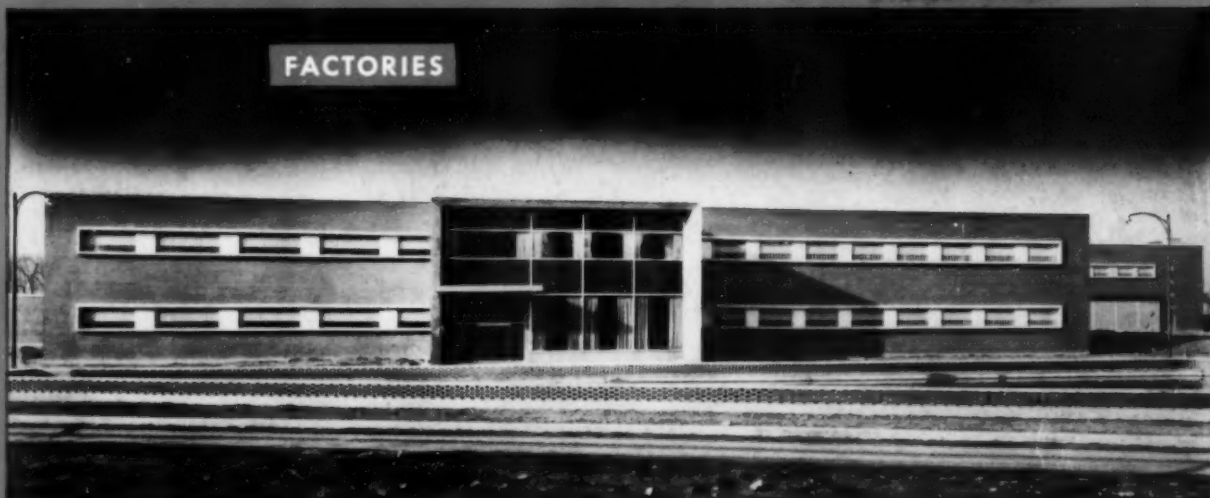


AUGUST 1953

# ARCHITECTURAL RECORD



FACTORIES

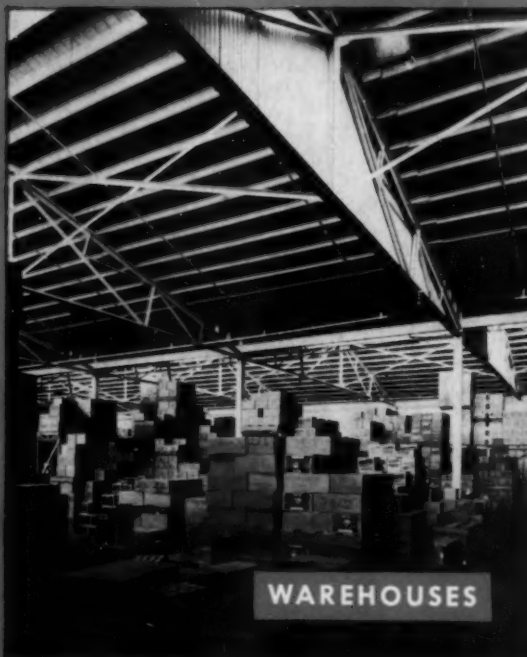
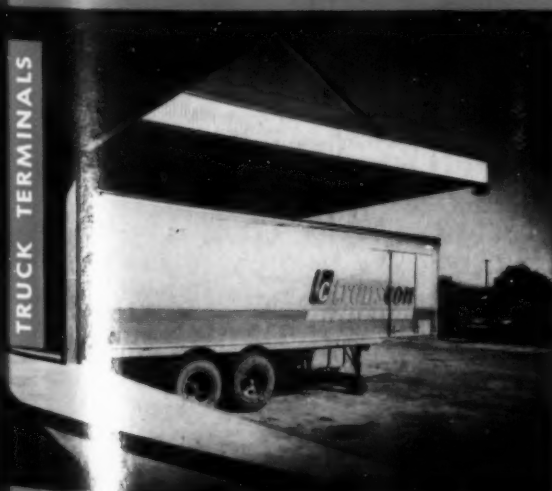


## INDUSTRIAL BUILDINGS

BUILDING TYPES STUDY NUMBER

201

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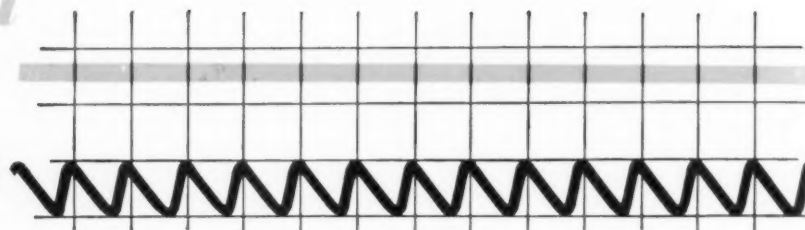
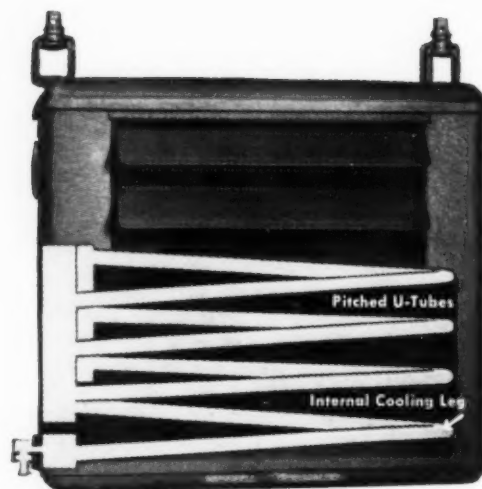


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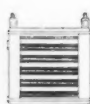
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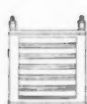
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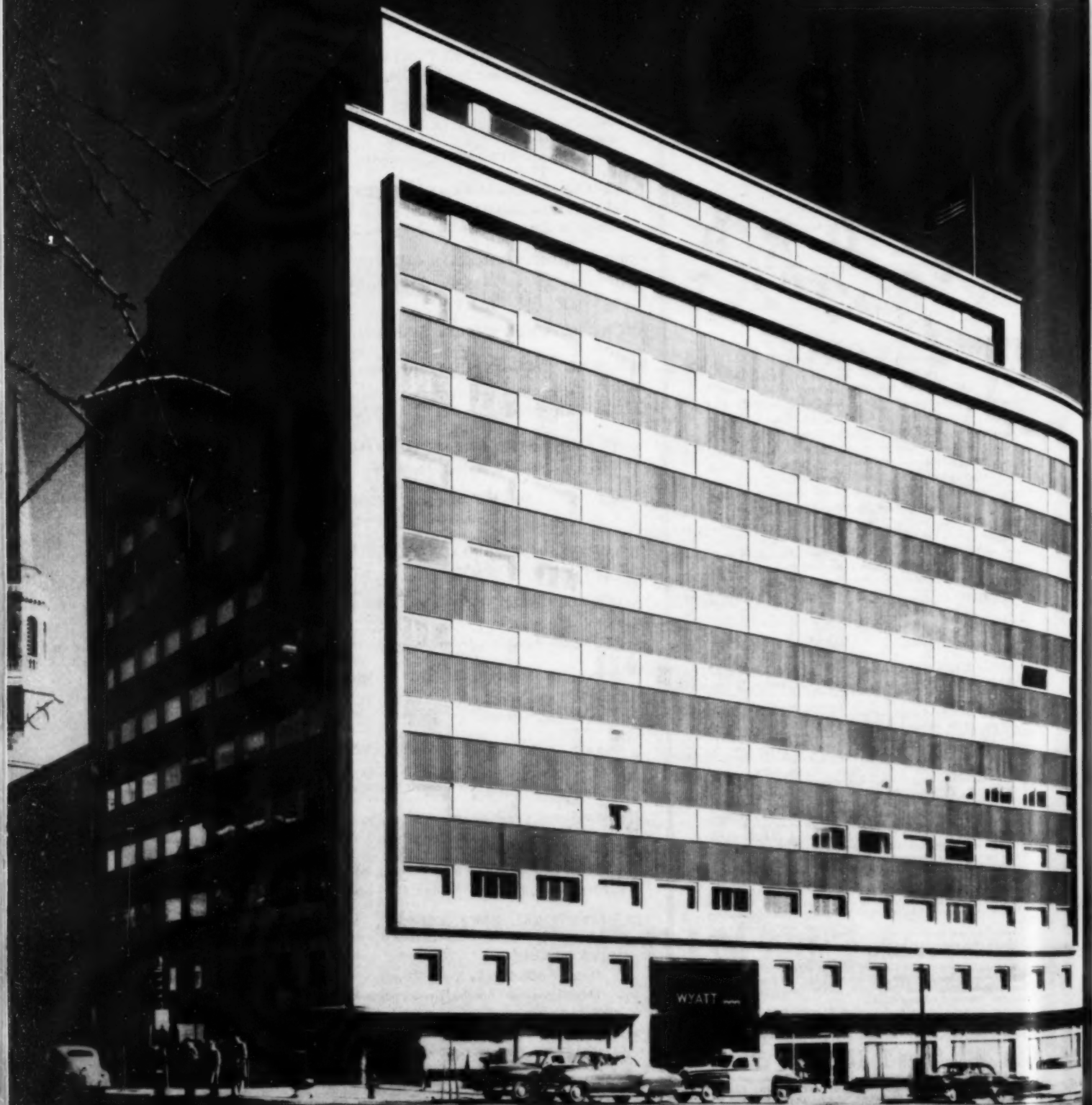
Cover: Above, factory for The Mennen Company, Morristown, N. J., A. M. Kinney, Inc., Engineers and Architects; Interstate Photographers, photo. Below, left, truck terminal for Transcon Lines, Los Angeles, Allison & Rible, Architects; Robert C. Cleveland, photo. Below, right, Smart & Final warehouse, Phoenix, Ariz., McClellan, MacDonald & Markwith, Architects; Stuart A. Weiner, photo

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# AWARD



# THE RECORD REPORTS

## P E R S P E C T I V E S

**A NEW COUNTRY — A NEW ARCHITECTURE:** The theme of the 85th annual convention of the American Institute of Architects was conceived as a regional one — an opportunity to explore the effects upon the architecture of the Northwest of the geographic, economic and social factors peculiar to the area. The tours, exhibits and the program, emphasizing the lumber resources of the Northwest and architectural applications of wood and wood products, did implement this conception; but the three major speakers gave it a much broader interpretation. Even William M. Allen, the Boeing Airplane Company president who opened the Seattle meeting with a vivid picture of the resources and economic development of the Northwest, found in his own analysis of the area a frame of reference — "Opportunity Unlimited," he called it — which encompassed at least the whole of America. The significance of regional influences in shaping the environment of all men everywhere was, however, a constant factor in every interpretation of the theme.

**THE TEST OF GREATNESS:** Of all the words spoken at the 1953 convention Pietro Belluschi's are likely to be longest remembered and most dis-

cussed. So we must accept and record as one of the aspects of 'New Architecture' the strivings of a few great artist-architects towards new and valid esthetic symbols by which future generations may remember us. . . . It seems to me that the test of greatness of any artist-architect is not that he be also practical but that he allow his inspiration never to be too far from the demands of his age, and the emotional needs of his contemporaries."

"Great architecture is always a 'Unity' and cannot be explained or dissected into parts," Dean Belluschi said, ". . . yet we may find it expedient to view such a Unity from three different vantage points." The three points: "First: The exploration of structure as a source of form. . . . Second: Our attempts to more deeply understand human nature and to provide forms which will satisfy man's physical and emotional demands; in short to make the nature of modern man the reference of our architectural thinking. . . . This concept includes . . . the understanding and acceptance of regional architecture as a sympathetic manifestation, and as a recognition of human values peculiar to certain people and places. . . . Third: . . . the attempts by the very few creative intellects to find visual esthetic symbols in a world which is in the way of losing the meaning of its destiny, in the many conflicts raised by science." Dean Belluschi followed his talk by showing 71 slides selected to illustrate his three points.

**THE FORWARD LOOK:** "A new country," said Boeing's William M. Allen, "is a place where you may break with tradition and get away with it. . . . Our people have an independence unmatched, I think, elsewhere in the country. If they have a tradition, it is that of the pioneer. They have retained and developed the forward look, the willingness to try something new, to look for the better way. That, I

am sure, includes architecture as well as other things. . . . In the Pacific Northwest our living is characterized by outdoor activities, natural beauty, home gardens, hillsides, shorelines, and mountains and marine views. The architect has an opportunity to make the most of these — to make the functional lines of good engineering fit the natural beauty of the countryside, to make architecture fit our way of living."

Mr. Allen cited "Opportunity Unlimited" as the broader basis of all development in the Northwest; and he added: "If the Pacific Northwest connotes the spirit of opportunity, it is a spirit which is typically American; one that can be and is being applied everywhere, because the opportunity is not so much with place as with people."

**LIVING WITH THE EARTH:** The principal address at the annual banquet was made by George H. T. Kimble, director of the American Geographical Society, and it dealt with regionalism in the broadest terms of all. "We Americans," Mr. Kimble asserted, "have been on a wonderful spending spree for the past 250 years. . . . We have come perilously close to bankruptcy" — and for evidence he cited the 1952 Report of the President's Materials Policy Commission. "From now on . . . we have got to accustom ourselves to the thought of living in a strictly limited earth." The "art of environmental appreciation," said Mr. Kimble — feeling for spatial difference and identity — and "a recognition of limitations, both regional and global," are essential preconditions to learning how to live with a limited earth. "By learning to live with the earth today," he concluded, "we may yet live to see a tomorrow when 'Nation shall not lift up a sword against a nation, neither shall they learn war any more. But they shall sit every man under his vine and under his fig tree and none shall make them afraid.'"



cussed. Reiterating his own conviction that any architecture of lasting significance must satisfy the mind as well as the senses, Dean Belluschi at the same time warned that "architecture could not long last as a non-pure art if it did not forever tend to trespass into the preserves of pure





Roger Dudley

A.I.A. directors with Capitol Plan urged in one convention resolution. L-R: Edward L. Wilson — Texas; John N. Richards (retiring) — Great Lakes; C. E. Silling (retiring) — Middle Atlantic; Philip D. Creer — New England; Edgar H. Berners — North Central; Irving G. Smith (retiring) — Northwest; W. Gordon Jamieson — Western Mountain



Presidents John Wade of the Architectural Institute of British Columbia (left) and Schlomo Sha'ag of the Architectural Association of Israel (right), with retiring A.I.A. President Glenn Stanton and Mrs. Chloethiel Woodard Smith, International Relations chairman

THE 85TH ANNUAL CONVENTION of the American Institute of Architects will probably live in most memories as "that wonderful trip to the Northwest." For 141 of the nearly 1500 architects and their guests who registered June 16-19 at the convention's Hotel Olympic headquarters, the fun began when the A.I.A.'s "convention special" train left Chicago on June 8 for a seven-day swing through the rugged scenic drama of the Canadian Rockies, with stops at Banff, Lake Louise and Victoria en route to Seattle. For more than 500 conventioners still another pre-convention feature will be a major memory of Seattle 1953 — the all-day tour through the Olympic Peninsula properties of the Simpson Logging Company, with the company providing a graphic account of modern forestry practices and a whole day of thrilling demonstration of the timber-to-lumber story.

When the convention got down to business on June 16, the assembled architects had an expert introduction to the regional context of the convention theme — "A New Country — A New Architecture" — by William M. Allen, president of Seattle's Boeing Airplane Company, whose keynote address, "A New Country," credited the pioneer tradition of independence and "the willingness to try something new" of its people with developing the Northwest as a region of "opportunities unlimited" in many fields — including architecture. The current awareness of regional influences in the development of contemporary architecture was reflected also (see page 9) in the two other major speeches of the convention — the annual banquet address "Living with the Earth" by George H. T. Kimble, director of the American Geographical Society, and the closing address, undisputed highlight of the

(Continued on page 284)

## THE NORTHWEST'S THE THING

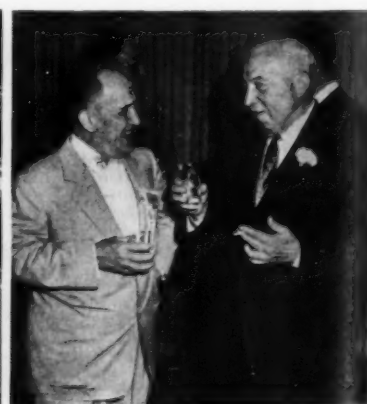
Forde photos



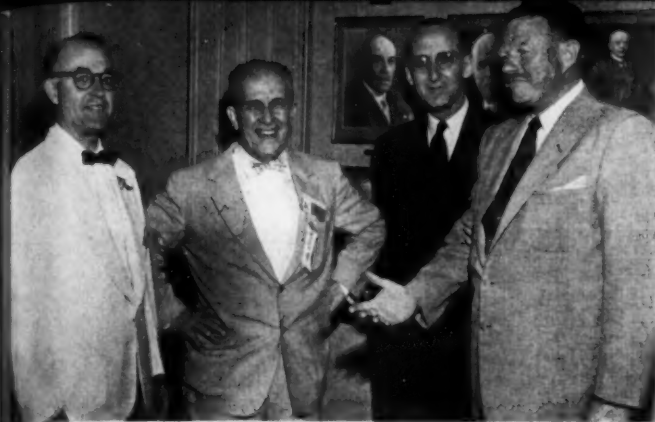
The all-day tour of the Simpson Logging Company properties at Shelton, Wash., drew 550 architects and their guests for a visual presentation of all phases of the lumber industry — including thrilling demonstrations of log rolling and tree topping. Participants thought the day set a pace for the convention itself that was hard to match



One of the "corridor conversations" that make an important part of any convention — Mr. and Mrs. Maynard Lyndon of Los Angeles and Mr. and Mrs. J. Robert F. Swanson of Bloomfield Hills, Mich.



A.I.A.'s new president — and erstwhile secretary — has a laugh with Thomas S. Holden, vice chairman of Board of F. W. Dodge Corp.



The new A.I.A. president, Clair W. Ditchy of Detroit (second from left), with Elliott C. Spratt, Producers' Council president, and John Haynes, new managing director of the Council. Joseph B. Mason, executive editor of ARCHITECTURAL RECORD, is at left



This group from the preconvention train tour got together for a "reunion" picture at one of the parties — ARCHITECTURAL RECORD's executive editor, Joseph B. Mason, is seated at left, and a senior associate editor, Frank G. Lopez, at right. New Gulf States Regional Director Clyde Pearson is second from right (sitting, front)

## FOR 1500 AT A.I.A.'S SEATTLE CONVENTION

*A.I.A. National Honor Awards on page 12*



Hungry tourists got a hearty "chuck-wagon" lunch of Swiss steak on the shores of Mason Lake. Above at left (front), Mrs. Marjorie McLean Wintermute, Portland, Ore.; Mrs. Joseph Weinberg, Cleveland; Mr. Weinberg; (rear), Miss Mary Alice Hutchins, Portland; Miss Marion Manley, Miami;



and USPHS Chief Architect Marshall Shaffer. Center, a Houston contingent — (seated) Harold Calhoun and Mrs. Maurice J. Sullivan; (standing) Mr. Sullivan, A.I.A. treasurer, and Albert Goleman. Right: the Morris Ketchums of New York and the Harris Armstrongs of St. Louis



"Oriental Influence" Seminar Speakers Harwell Harris, Texas U. architecture director, and Prof. Winfield Scott Wellington, U. of California, with A.I.A. education and research chief Walter Taylor



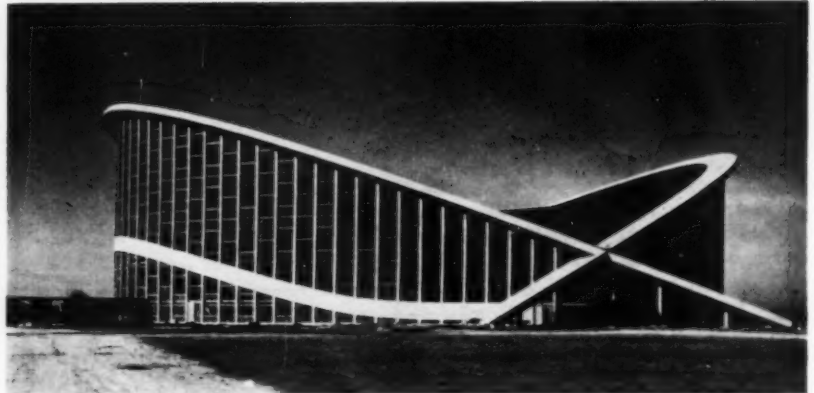
Arthur B. Holmes, the A.I.A.'s convention manager and a busy man at Seattle, with Philip D. Creer of Providence, New England regional director, and Donald Beach Kirby of San Francisco



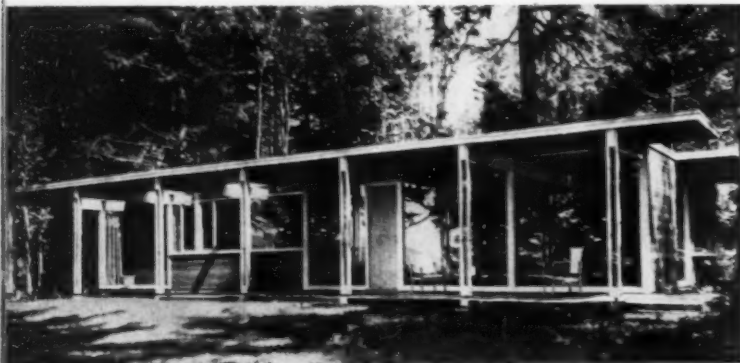
George Mayer, Cleveland; U. of Oregon architecture Dean Sidney Little and Mrs. Little; and Buford Pickens, late of Tulane, now architecture dean at Washington U., St. Louis

## THE RECORD REPORTS

### 1953 NATIONAL HONOR AWARDS FOR ARCHITECTURE



**HONOR AWARDS IN FIFTH ANNUAL** exhibition at Seattle convention were given for two buildings: engineering staff building (left above), General Motors Technical Center, Warren, Mich., designed by Saarinen, Saarinen & Associates, with Smith, Hinchman & Grylls, architects and engineers; and the North Carolina State Fair Pavilion, Raleigh, N. C., designed by William Dietrick and the late Matthew Nowicki, with Severud-Elstad-Kreuger, consulting engineers



Dearborn-Massar Photo

1



2



3

**MERIT AWARDS WERE GIVEN** for five buildings. 1. Forest Residence, Bellingham, Wash.; Bassetti & Morse, architects. 2. Gavella & Perego development house, Santa Clara, Calif.; Anshen & Allen, architects. 3. Gilman Residence, Kent Woods, Marin County, Calif.; George T. Rodkrise, architect. 4. Corning Glass Center, Corning, N. Y.; Wallace K. Harrison, Max Abramovitz and Charles H. Abbe, architects. 5. Republic Supply office and plant, San Leandro, Calif.; George Vernon Russell, architect



4



5



## MEETINGS AND MISCELLANY

*Whither Cities?*

THE METROPOLIS IN MODERN LIFE," a three-day conference January 7-9 of scholars and specialists from this country and abroad, will lead off the elaborate program planned by Columbia University to celebrate its bicentennial in 1954 around the general theme "Man's right to knowledge and the free use thereof." Each of eight sessions will be devoted to a selected "subtopic," with speakers presenting brief summaries of papers prepared in advance and circulated among invited participants selected for their "experience, intellectual leadership or position of responsibility" to contribute to "mature discussion." The subtopics: The Dynamic Role of the City in Social Development; The Influence of Science and Technology on the Modern City; The Influence of the Metropolis on Concepts, Rules and Institutions Relating to Property; Economic Advantages and Disadvantages of Metropolitan Concentration; The Impact of the Metropolis on the Spiritual Life of Man; Contributions of the Metropolitan Community to the Political Institutions of a Free Society; The Impact of the Metropolis on the Professions; The Search for the Ideal City. Among the major speakers: Architects Richard J. Neutra of Los Angeles and John E. Burchard, dean of humanities and social studies at Massachusetts Institute of Technology.

*Record Article Honored*

LEWIS MUMFORD has been selected to receive the \$500 Howard Myers Award for the most significant article on architecture appearing in any American periodical since the first award in October 1951.

Mr. Mumford, who will receive the award at a ceremony at the Architectural League of New York after his return from Europe this fall, is being honored for his article, "Function and Expression in Architecture," which was published in the November 1951 issue of ARCHITECTURAL RECORD.

*Engineers' Earnings*

FIFTY PER CENT of 13,000 professional engineers replying to a survey conducted by the National Society of Engineers for the National Manpower Council earned more than \$8350 in

1952, according to a recent announcement by Paul H. Robbins, the Society's executive director. Other statistics on engineer earnings: 90 per cent earned more than \$5620; 75 per cent earned over \$6640; 25 per cent over \$11,500; and 10 per cent over \$17,200. Median salaries at successive stages of experience: four years, \$5220; nine to 10 years, \$6980; 30-34 years, \$9550 — this was the highest median and a slight decline appeared thereafter.

*From Practice to Campus*

PAUL SCHWEIKHER of the Roselle, Ill., architectural firm of Schweikher and Elting was appointed professor of architecture at Yale effective July 1 and will become chairman of the Department of Architecture next February when Professor George Howe retires. Professor Schweikher will continue private practice with his Roselle firm and will also open offices in New Haven.

JOHN EKIN DINWIDDIE leaves his San Francisco practice September 1 to become dean of the Tulane University School of Architecture. Mr. Dinwiddie

succeeds Prof. Buford L. Pickens, who recently became head of the School of Architecture at Washington University in St. Louis.

*"Copying" Charges Net \$50,000*

CLIFF MAY has announced that a settlement has been made and a license issued to Alcap Investment Company and the Capital Company as Joint Venturers, covering a 297-house project near Fresno, Calif.

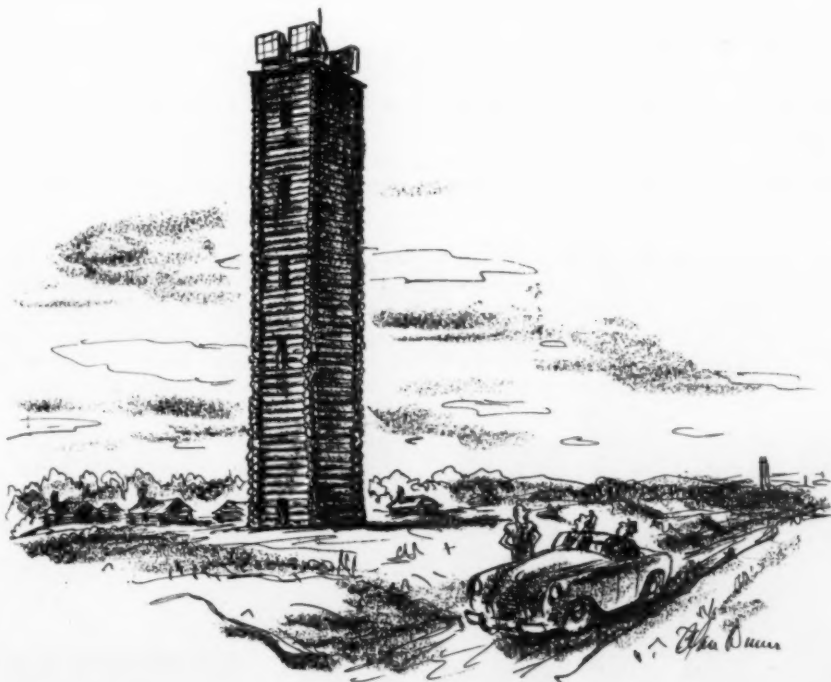
It was claimed that the four demonstration homes built by the Alcap Investment Company were copies of the National Association of Home Builders Prize Winning \$7500 house designed by Cliff May and Christian E. Choate and built at Cupertino, Calif.

The claimed infringement of copyrights and designs by Cliff May and Architect Christian E. Choate was finally disposed of by the agreement to pay the architect's fees on each house and lot sold in the tract. The fees will amount to in excess of \$50,000.

*Tourist in Germany*

LUDWIG MIES VAN DER ROHE went back to Germany this summer for the first time since he emigrated to

(Continued on page 16)



—Drawn for the RECORD by Alan Dunn

"I must say, the radio-relay people were certainly cooperative about 'regionalism' " —

## THE RECORD REPORTS

(Continued from page 15)

the United States in 1938 to become director of the architecture department at Illinois Institute of Technology and architect of its 110-acre campus, now about half-completed. The former director of the Bauhaus planned to visit relatives and friends in his native Aachen and other European cities.

### Whither Factories?

The 1953 conference of the Association of State Planning and Development Agencies heard a preliminary report on the principal findings of a survey by the National Industrial Zoning Committee of the characteristics

of industrial plants built within the last five years. Harold V. Miller, executive director of the Tennessee State Planning Commission, analyzed data on 137 plants in 25 states and in both eastern and western Canada — based on answers to questionnaires sent out by the committee. Admittedly restricted in scope and purpose, the survey nevertheless produced some interesting statistics:

*Plant location* — in city, 22; outside city, 107.

*Surroundings of new plants* — "open country," 24 (16 in city, 8 outside); partly developed, 72 (outside); built-up area, 37 (6 in city, 25 outside, 6 not specifying).

*Dominant commodity movements* — inbound, 70 by rail, 59 by truck (actual handling at plant), two by water; outbound, 33 by rail, 98 by truck (actual handling at plant), one by water.

*Area of plant sites* — range from less than one acre to more than 900 acres; 61 less than 10 acres, 54 between 15 and 100 acres, 10 between 120 and 500 acres, and 4 between 500 and 900 acres.

*Per cent of lot covered by building* — one to nine per cent, 31; 10 to 29 per cent, 39; 20 to 29 per cent, 33; 30-39 per cent, 12; 40 per cent or more, 21.

*Building height* — one story, 119; two stories, 6; three stories, 4; four stories, 3; five stories, 1.

## BRITISH ARCHITECTS HOLD THEIR ANNUAL CONFERENCE

By Eric L. Bird, Editor  
R.I.B.A. Journal

THE BRITISH POSTWAR school building drive was the subject discussed at the annual British Architects' Conference held this year in the ancient city of Canterbury (for its superb architecture) and in the nearby seaside resort of Folkestone (for its hotels). School building has been one of three licensed priorities in Britain since 1945 and over 1500 new schools have been built. The end of the drive is by no means in sight, thanks to a new Education Act and an expanding child population. This conference was a get-together or stock-taking on the progress of the program.

Starting with postwar enthusiasm in 1945, the Ministry of Education has had

progressively to screw down its conditions for granting constructional loans as building costs have risen; but has declined (Ministry-like) to permit any reduction of standards. For the way in which architects have met this challenge they were given a pat on the back by Mr. S. A. W. Johnston-Marshall, Chief Architect (in charge of research) of the Ministry of Education. He said that simplification of components, close study of structure, and elimination of unnecessary circulation space had reduced the price per school place from £450 (at present costs) in 1949 to £240 per place today. There was no "black magic" about this. It had been attained by deliberate rethinking of most of the familiar problems and by hard work.

The authorities responsible for schools in Britain are the County Councils. Practically all of them have permanent

salaried architects who, in addition to advising their Councils about new building, are responsible for maintenance. Some of the new schools are designed by the county architects but a high proportion have been given to private architects, the county usually doing some of the secondary work such as site surveys and accounting. On the whole this system works extremely well, there being friendly rivalry between the official and private architects.

After Mr. Johnston-Marshall's general summary, there were four papers, two by official architects and two by private architects. Mr. Richard Sheppard, a private architect, analyzed postwar design developments for what he termed "the new pattern of education." Mr. C. H. Aslin, a county architect and a vice-president of the Royal Institute of British Architects, who has built over

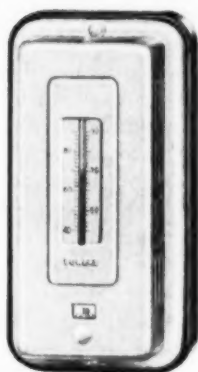
The annual British Architects' Conference is quite another thing from A.I.A. annual conventions — elections, awards and business are taken care of at separate meetings (distances make a difference) and the annual Conference is "mainly, but not entirely, a piece of public relations." As these pictures show, however, the two meetings have some things in common. Far left: R.I.B.A. President Howard Robertson and

Robert W. Paine, South Eastern Society president; next: R. Schofield Morris, Canadian architects' president, addressing the annual dinner; three of the lecturers, S. A. W. Johnston-Marshall, C. H. Aslin, and F. R. S. Yorke; and American visitors Raymond Kastendieck, of Gary, Ind., newly elected A.I.A. Great Lakes regional director, and Mrs. Kastendieck, with W. A. Shirbon



Architectural Press Photos

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Experience gained by Powers here and in many other important large and small buildings will be helpful to you. Next time a temperature or humidity control problem arises, contact POWERS nearest office. There's no obligation.

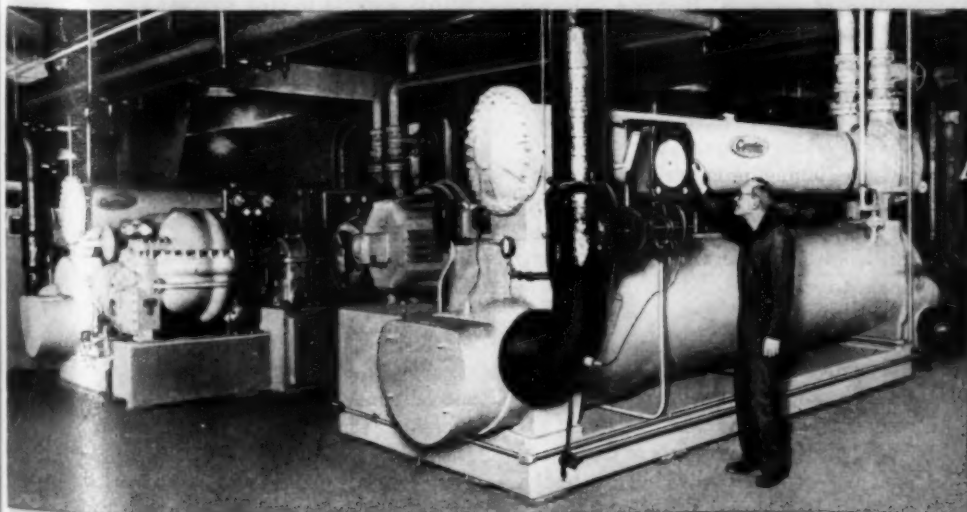
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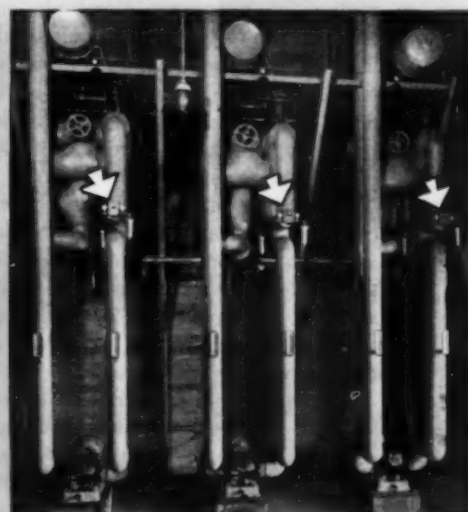
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(b16)



Mr. Henry Burckert, Chief Engineer inspecting one of the two Powers Series 100 Recording-Controllers on two Centrifugal Refrigerating Compressors (610 Ton Cap.) supplying chilled water for air conditioning.



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### CONSERVATION IN BUILDING: BRAB REPORTS AGAIN

THE BUILDING RESEARCH Advisory Board of the National Research Council has wound up its two-year study of conservation in building construction for the Office of Defense Mobilization and its predecessor, the Defense Production Administration, with a final report on the second year's results. The report forms Part 2 of BRAB's study and is intended to implement the recommendations made in Part 1, the 1952 report.

At the heart of the new report itself is a series of 11 recommendations, some new, some amplifications of previous recommendations, and some restatements of 1952 proposals. The report also describes positive steps which have been taken to realize several BRAB objectives, but does not make specific proposals for the setting up of operative machinery in most categories.

#### *Final Recommendations*

The net results of the BRAB project are embodied in these proposals for expediting conservation in building:

1. Present construction agencies in the Government and technical organizations in the building industry should improve the processes of implementation of new and revised standards and design criteria, and remedy inadequacies in the standards-making machinery where appropriate technical bodies are non-existent or not well defined.

2. Government and industry should agree on principles for the preparation of emergency technical criteria and standards and should define and provide stand-by machinery for quick preparation of emergency standards and criteria. The Government should establish a firm policy of collaboration between its own agencies and the recognized organizations and technical bodies in the building industry responsible for criteria and standards.

3. Administrative heads of Federal construction agencies should establish and finance a continuing mechanism for technical collaboration between their agencies, similar to the "Federal Construction Council" tried as a part of the conservation study.

4. The Government should make possible the development of a Climatological Atlas by the U. S. Weather Bureau.

5. Technical organizations should foster and conduct studies on the inter-relationship of design factors used in

the several related fields of building design and engineering to provide data enabling the designer to reduce excesses in design as an important contribution toward conservation in building.

6. The Government should provide leadership in studies of the life of buildings for the general understanding of building cost and lowest annual cost, and physical characteristics, maintenance and management, and life expectancy all should be considered.

7. Technical and industry organizations should consider the need for collaboration in research and in preparing design criteria for electrical systems as applied to building construction.

8. Activities should continue in the research and establishment of criteria for space usage and the planning of buildings, and should be extended to include information desired by designers for various major building types.

9. Consideration and development should be given to a proposal for an industry-supported organization for the advancement of research beneficial to the plumbing industry.

10. Federal construction agencies should support and maintain coordinated research for the solution of technical problems arising from design, operation and maintenance of Federal buildings and (adopt) procedures for trial and adoption of research results, so that Federal funds for construction could be expended more effectively. Organizations in each sector of the building industry should also support both basic research in individual fields and integration of research. Building industry and Federal research efforts should be integrated for mutual benefit.

11. Government and industry, each in its separate sphere, should investigate ways of raising adequate funds to establish continuing programs for development and research in building technology. More positive ways should be found for channeling Government and industry funds to support building research.

#### *First Results*

Tangible steps already have been taken to implement some of the BRAB recommendations, either as a direct result of the Board's reports or independent and coincidentally but with the same effect. These steps include:

With respect to the third recom-

mendation in the 1953 report, a "quasi-official" organization known as the Federal Construction Council has been given a trial run conducted by BRAB. Established about seven months ago, the organization serves as an interchange of information on Federal structural projects and includes representatives of various government agencies.

The report's sixth recommendation has been implemented with an Advisory Panel Report, described by BRAB as "a significant exploration of the subject of lowest annual cost and building life (which) could serve as a point of departure for further study by research."

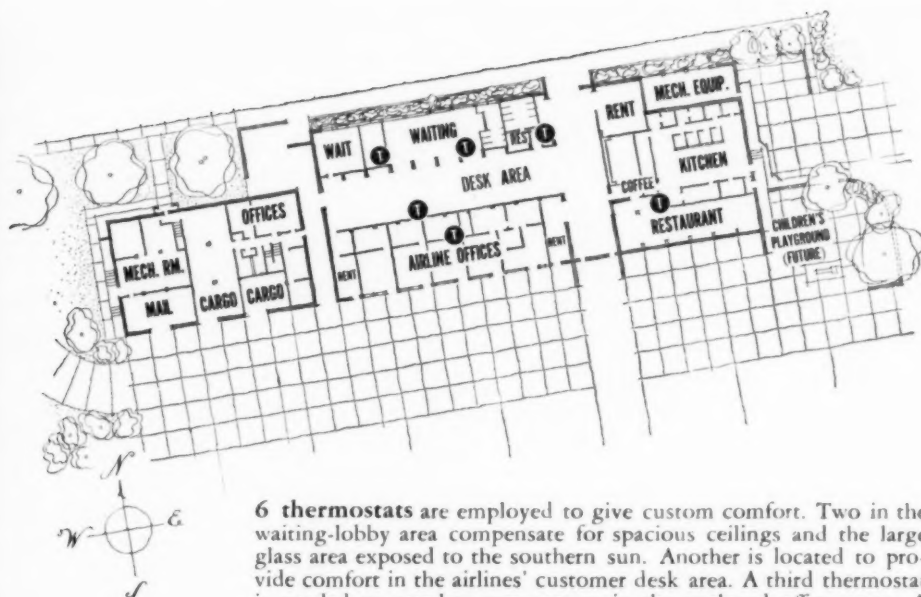
An independent project undertaken by the American Standards Association has the effect of implementing the report's eighth proposal. With the sponsorship of the National Association of Building Owners and Managers and the U.S. Office of Education, A.S.A. has created a committee to pursue a project for "Determination of Areas in Buildings," a study embracing standards applicable to schools, public and office buildings and other structures.

Also serving to implement the eighth recommendation is a proposal being drafted by a joint committee of the American Hospital Association, the American Institute of Architects, and the American Association of Hospital Consultants for the establishment of a research institution to establish criteria in the designs of hospitals and hospital facilities. The committee, which was originated following a conference sponsored jointly the A.I.A., A.H.A. and BRAB, expects to seek support for the establishment of the institution.

A summary of the report and reprints of significant sections are available free from BRAB, 2101 Constitution Ave., Washington, 25, D. C. The full report may be made available later.

#### **"3-D" BUILDING RESEARCH**

ANOTHER ASPECT of the growing concern with the necessity for building research was pointed up in the inauguration by Lake Forest (Ill.) College of a special summer session on "Integrated Building Design and Construction." Headed by Howard T. Fisher, the program aims at providing students with actual practical experience in using the three-dimensional materials of building.



6 thermostats are employed to give custom comfort. Two in the waiting-lobby area compensate for spacious ceilings and the large glass area exposed to the southern sun. Another is located to provide comfort in the airlines' customer desk area. A third thermostat is needed to regulate temperature in the enclosed office areas. A fourth, in the restaurant, compensates for heat loss (or intake) through big glass windows.

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### SCHOOL TRUSTEES HEAR WARNING ON STOCK PLANS

STANDARDIZED DESIGNS are not a remedy for high school building costs, A. R. Prack, vice president of the Ontario Association of Architects, told the Urban and Rural School Trustees Association at its recent annual convention.

He said such plans would affect only about three per cent of the total cost of schools. Further, he asserted, if they had been in use during the postwar period the great economies made in school construction would not have been possible.

Some trustees have argued that building costs could be cut if the Department of Education provided standard plans

for schools of all sizes. They would be made available to school boards who would then, presumably, be able to do without an architect.

#### What About Costs?

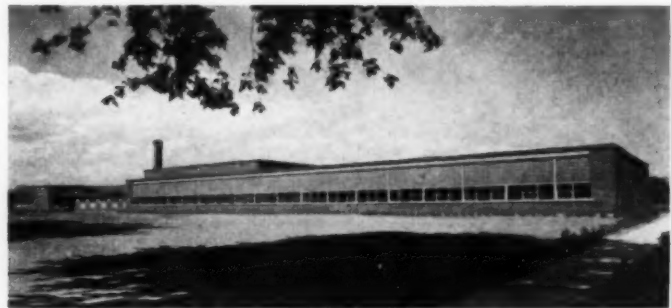
Mr. Prack, emphasizing that the architect regards each school he designs as a new challenge, noted that careful attention to function has yielded great economies in recent years. Schools are more economical to build now than before World War II, he insisted — and

cited figures on school construction in his home town of Hamilton, Ont., to support his statement. A secondary school built there in 1929 at \$8.14 per sq ft would cost \$15.53 today, he said; yet a high school built there two years ago cost \$11.90 per sq ft.

Timing and geography were proposed by Mr. Prack as the greatest factors affecting costs — in winter, for example, masonry and concrete work is more expensive and "labor is less industrious"; if a school board can get a contractor before his peak period begins, more money will be saved, Mr. Prack added.

Two architect-designed schools recently completed in Ontario: left, Glencoe District School; right, West Elgin School. Architect: C. H. Gillin of London, Ont.

Ron Nelson



### CONSTRUCTION APPROPRIATION SCORE: MID-JULY (IN \$ MILLIONS)

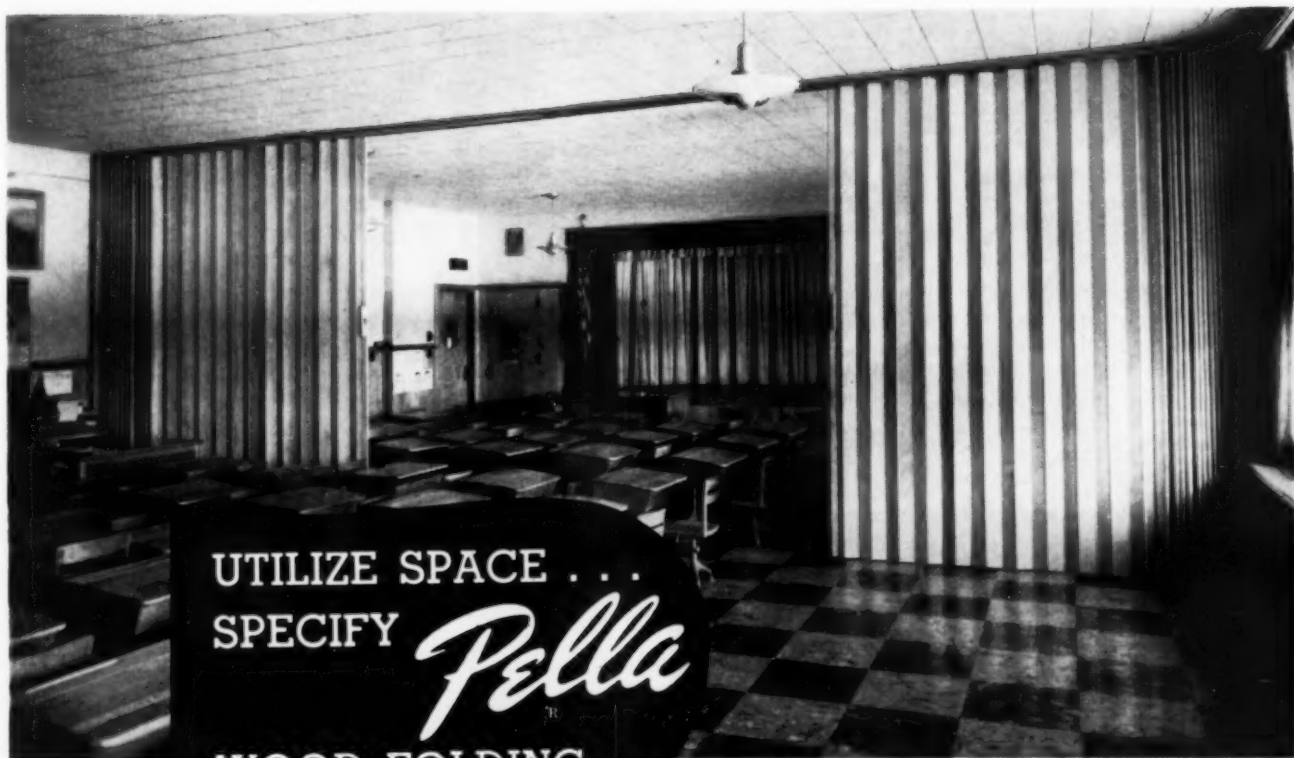
CONSTRUCTION APPROPRIATIONS continued to provide one of the favorite sources of economy as the Congress struggled to push through the money bills that were musts before the August 1 target date for adjournment could become more than a target. The effect on 1954 construction of the lower appropriations figures can safely be assessed, however, only with an eye on the high level of carryover funds now available, for example, to the Defense Department.

- |                       |                         |
|-----------------------|-------------------------|
| 1) Eisenhower request | 6) Joint committee      |
| 2) House committee    | 7) Final House          |
| 3) House              | 8) Final Senate         |
| 4) Senate committee   | 9) Eisenhower signature |
| 5) Senate             |                         |

<u>Agency</u>	<u>Fiscal</u> <u>1953</u>	<u>Truman</u> <u>Budget</u>	<u>Latest</u>
<b>Dept. of Defense</b>			
<b>Military public works</b>			
Air Force.....	1.2	700	400 <sup>1</sup>
Army.....	585	(no fiscal 1954	money requested)
Navy.....	361.2		
<b>Labor-HEW</b>			
Rev. of BLS housing statistics.....		95(thousand)	95(thousand) <sup>5</sup>
Hospital const. (H-B).....	75	75	75 <sup>3</sup>
School construction.....	195	(no fiscal '54 auth.)	
<b>Independent Offices</b>			
Housing and Home Finance Agency (total).....	104.4	75.5	64.9 <sup>5</sup>
Cap. grants for slum clearance.....	8	20	20 <sup>5</sup>
Atomic Energy Commission (plant & equipment) ..	3.2(billion)	436.3(million)	166 <sup>4</sup>
VA hospitals.....	49.7	92.3	2.5 <sup>4*</sup>
<b>Army Civil Functions</b>			
General investigations.....	3.2	5.5	3.4 <sup>5</sup>
Construction, general.....	404.8	491.2	313.2 <sup>5</sup>
Operation and Maintenance.....	83.8	90	77.5 <sup>5</sup>

\* Planning funds for three proposed new hospitals (San Francisco, Topeka and Houston). No construction money.





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VENETIAN BLINDS

## THE RECORD REPORTS

### CANADA

(Continued from page 24)

It costs less to build a school in a remote small town than in a small town near a big city, he said; in the former, the labor will be local and may be non-union, while in the latter, the big city contractor, with union labor, will be

hired and will add traveling expenses to his costs.

Mr. Prack also reported that his own firm's research had shown a one-story school to be more economical to build if it contains up to 12 classrooms. Beyond that size, the two-story school was found to be more economical.

### 1960 BUILDING LEVEL OF \$8 BILLION IS FORECAST

A volume of construction worth \$8 billion in 1960, almost double current

annual construction, has been predicted by John N. Flood, president of the Canadian Construction Association.

He bases his calculation on the theory that the construction industry will continue to expand at the same rate as in the postwar period and prices will remain at today's levels.

Mr. Flood also envisions steel production of 6,500,000 tons in Canada in 1960 and cement output of more than 47 million barrels.

However, he points out, demand for construction depends on many economic and psychological factors — the whims as well as the financial resources of owners and their assessment of construction and other capital costs in terms of the potential return on their investment.

In Mr. Flood's opinion, Canadian construction has some serious growing pains ahead. He noted a trend toward individual projects on a larger scale which may force construction companies to develop new sources and methods of financing.

Referring to a shortage of skilled machinists, he pointed out that labor has a significant stake in the construction industry, since about 90 per cent of the value of construction contracts represents wages to on-site employees and those engaged in manufacturing, distributing and transportation industries.

### The Big Problem: Housing

Housing continues to be the leading social problem, Mr. Flood declared, adding that it is essential that additional financing sources be developed. It would be desirable, he noted, for these funds to come from private sources.

Mr. Flood also predicted a continuing problem in building sufficient roads.

### LATEST FIGURES REVEAL 1953 BUILDING OVER '52

Canada's building boom continues. After a serious first-quarter lag, April construction contract awards showed a sharp reversal of the earlier downward trend and latest available figures issued reflected a continued improvement in May that brought the total for the first five months of 1953 to \$789,295,700, or \$88,421,300 over the corresponding period in 1952.

May building awards, as reported by MacLean Building Reports Ltd., totaled \$181,682,800, an increase of \$5,951,700 over May 1952. Except for engineering,

(Continued on page 30)

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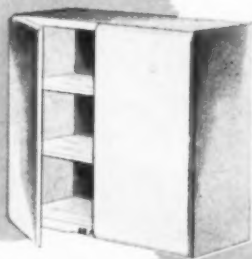
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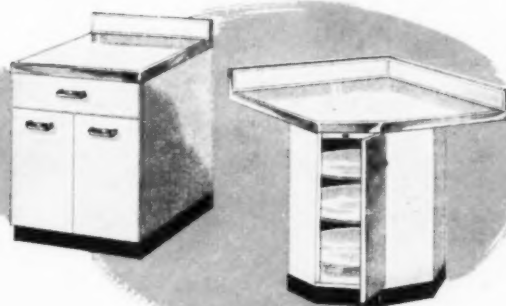
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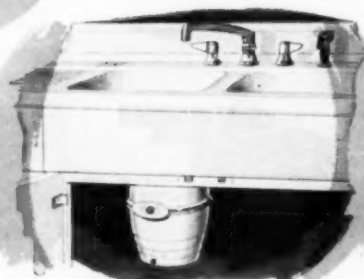


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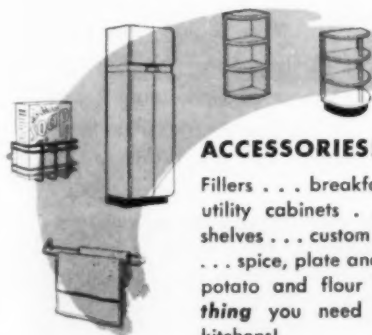
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## THE RECORD REPORTS

### CANADA

(Continued from page 26)

all categories of work gained in the month. Even in the engineering classification, such work as sewerage, waterworks, roads and streets, and power and communications was in larger volume. A major gain is reported for residential

building, but contract work on schools was down for the month.

#### Comparative Figures (from MacLean)

	May 1953 (\$ millions)	Per Cent Change From 1952
Residential . . .	68.4	+25.8
Business . . . .	48.2	+13.9
Industrial . . .	36.2	+ 9.1
Engineering . .	28.7	-42.9
Total	181.5	+5.9

Regionally, the May figures show a spotty pattern. In the Maritimes and

the West only residential and business construction gained; and in Quebec residential construction alone had a slight improvement.

Ontario figures were dominant in establishing the all-Canada pattern, with solid gains in residential, industrial and commercial construction and even a substantial counter-trend gain in engineering.

Types of projects in the 21 entries in the "Big Job" list (projects over \$1 million) reflect the overall figures, with only one outstanding engineering project on the list — \$5 million in additional work on the Niagara Falls hydro job. A \$30 million automobile plant in Oshawa, Ont., shaded all other undertakings by a good margin.

#### SIX-MONTH WAGE RAISE HELD TO 1.6 PER CENT

The most recent reports on the Canadian wage rate index showed an in-

(Continued on page 32)



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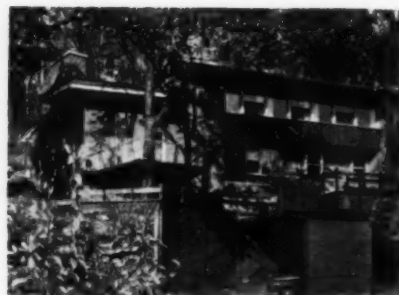
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James B. Hardy Studios

House design in Montreal meets a perpetual challenge from the fact that the city's choicest residential area is a mountain — Westmount. Max W. Roth was the architect for this Westmount house. Interior view shows corner of living room



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## FILTERED DAYLIGHT

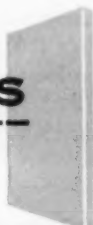
Sikorsky Aircraft gives its people the best in daylighting in this Bridgeport, Conn., plant. Big windows bring in an abundance of filtered daylight. It's Blue Ridge Frosted *Aklo*\* Glass.

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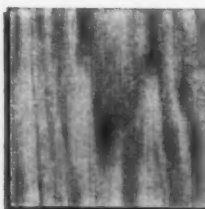
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## THE RECORD REPORTS

### CANADA

(Continued from page 30)

crease for the preceding six months of 1.6 per cent, compared with figures of 5.6 per cent and 2.9 per cent for the two previous six-month periods.

Figures on the index for the period October 1952–April 1953 were announced by Deputy Minister of Labor Arthur Brown after a review of the semiannual survey of wage rate changes in 800 representative establishments.

The percentage increase for construction wage rates was given as one per cent. In other industries, per cent increases were listed as follows: manufacturing — 2.0; transportation and communication — 1.2; service (laundries) — 0.8; logging — 0.2; mining — 0.2.

Average weekly earnings in non-agricultural industries as of March 1 reached \$57.47, an all-time record.

### In the News

JOHN BLAND has been named chairman of the Committee on Arrangements for the 1954 Assembly of the Royal Architectural Institute of Canada, to be held in Montreal. Members of the committee, all Montreal architects, include Maurice Payette, Henri Mercier, Richard E. Bolton and Randolph C. Betts.

TOWN PLANNING INSTITUTE OF CANADA has elected E. W. Thrift of Winnipeg as its new president. Other 1953–54 executive officers named at the Institute's recent convention in Windsor, Ont., are: E. G. Faludi, Toronto, vice president; P. Alan Deacon, Toronto, second vice president; and R. N. Dryden, Kitchener, Ont., secretary-treasurer.

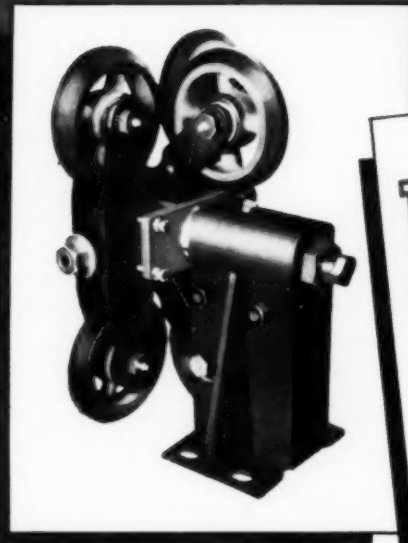
THREE TORONTO ARCHITECTURAL FIRMS have been appointed by the Toronto City Council to design a new \$10 million civic square. The firms are Marani & Morris, Mathers & Haldenby and Shore & Moffat.

DR. NEIL B. HUTCHESON has been appointed assistant director of the Division of Building Research of the National Research Council and assumed his new duties on July 1. Doctor Hutcheson was formerly professor of mechanical engineering at the University of Saskatchewan.

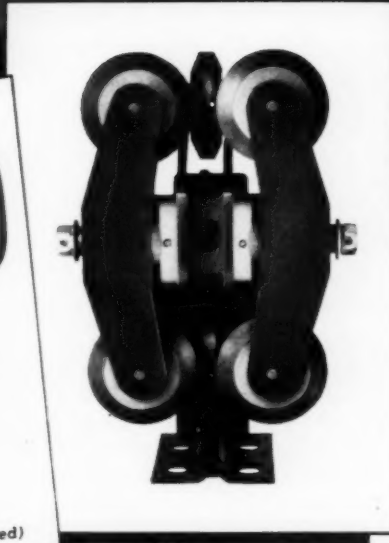
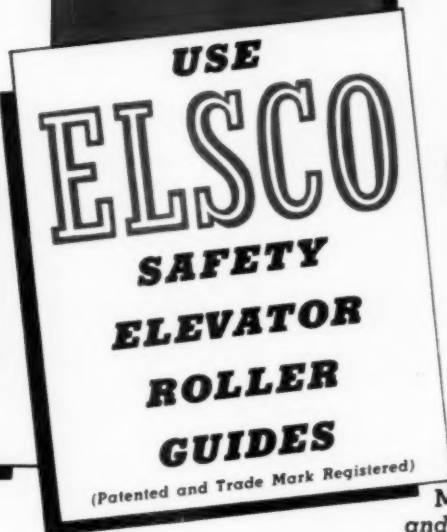


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**MODEL A**—for elevators



**MODEL C**—for counterweight  
and low rise, low speed elevators

1 Eliminate inflammable oil, grease and fuzz by operating elevators in completely dry shaftways and on dry rails. This will prevent for all time, flash and general fires starting or drawn into the elevator shaft. Fires in elevator shafts constitute the greatest menace to life and property in buildings.

2 Since ELSCO GUIDES roll and do not slide, they are an anti-friction device, and save between 25% and 40% in electricity. All of our tests have proven this savings beyond peradventure of doubt. Many customers made their own tests and all reported similar results.

3 The large labor cost of frequent hatchway cleaning is completely eliminated. Those customers formerly in doubt now report that on rare occasion they use vacuum cleaners to remove dust, although not essential.

4 ELSCO GUIDES take up all badly aligned rail and unbalanced conditions, because they operate on the principle of traction, oscillation and knee action. They contain stabilizing springs and actually glide and float in the hatchway. They contain adjustments so that they may be adapted to all conditions. They eliminate the knock and jiggling of cars and permit better leveling. They are readily adaptable for conversion from present sliding guides.

5 Dry rails create the perfect condition for the holding of safety jaws in the event of accident.

6 ELSCO SAFETY ROLLER GUIDES may be installed on all passenger and freight elevators, space permitting. They have been employed on the highest rise and speed passenger elevators and heaviest duty freight elevators. They are adjustable, take standard rails and jumbo rails up to 1 1/4" in width.

7 Model C units may also be used on passenger elevators up to 200 F.P.M. — 2500 lbs. capacity.

8 The rubber compound used on the wheel assemblies, specially developed by us during the last few years, stand up indefinitely.

9 There are two special rouge polished ball bearings in each wheel assembly. They come seal packed. We have nevertheless installed a zerkl fitting in each wheel assembly should lubrication be required at a later date.

10 Once installed and adjusted ELSCO GUIDES require no maintenance, with the exception of the recommended annual lubrication of bearings.

11 ELSCO GUIDES have been unanimously approved by the Board of Standards and Appeals of the City of New York up to 1200 F.P.M.

12 ELSCO GUIDES are now installed in every part of the United States and also in Europe, Canada and Mexico. There are more than 200 agents throughout the country ready to serve.

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One of a series of papers prepared by leading authorities on air conditioning. The opinions and methods presented are those of the author and are not necessarily endorsed by the Du Pont Company. Reprints of this article, and others in the series, may be had free upon request.

# Air Conditioning For Modern Industrial Buildings

by A. B. WATERBURY, Assistant Chief Engineer—Walter Kidde Constructors, Inc., New York, N. Y.



**A. B. WATERBURY** is a graduate of Stevens Institute of Technology, and a licensed professional engineer in New York State. For twenty years an associate of Clyde R. Place, Engineers, he worked on mechanical and electrical aspects of engineering projects. Mr. Waterbury joined Wal-

ter Kidde Constructors in 1947 and has worked on projects for many clients that have required complex air conditioning installations. For a period of three years he was an instructor in heating, ventilating and air conditioning at New York University.

Many of the manufactured products that are now considered commonplace, and which are sold at a price within the financial reach of all, were made possible as a result of modern air conditioning in industrial plants.

Air conditioning has advanced a long way since its early applications in textile and printing plants. For one thing, it has made increased defense production possible. Machine parts, regardless of where they are produced, can now be assembled at some common point without fear of mismates, as the parts were made under controlled air conditions. Fine and exact tolerances can be maintained regardless of plant locations or weather conditions. Laboratory testing and inspection procedures are now based on standard air and humidity conditions. There are fewer rejects in machine shop work because of tolerance or corrosion on fine parts due to humidity.

## TWO REASONS

There are two main reasons for air conditioning the modern industrial plant. Simply stated, these reasons are for the control of a specific process or production method, and for increased employee comfort that leads to increased production output. Process air conditioning is used to control moisture regain, rate of crystallization, rate of chemical and biochemical reactions, oxidation and the control of close machine tolerances.

## MORE EFFICIENT PRODUCTION

Industry is based on the production unit of output per man hour. Air conditioning is an important factor for

increasing efficiency, thus increasing production output.

The manner and extent to which air conditioning is applied to an industrial plant is largely dependent on the type of work. Those who work seated at benches or at small machines, as in assembling small parts, inspecting finished parts or in packaging, require a larger amount of cooling in summer or heating in winter than do employees who are on their feet or who move about. The average conditions for those seated at tables or benches during summer should be about 80°F. and 50 per cent relative humidity.

Drafts are an important consideration. Those who are seated at work, especially older workers, are particularly sensitive to excessive air movement or drafts.

## SAFETY FOR THE WORKER

Although some industrial processes may require high temperature and humidity, it is necessary to sacrifice something in the way of production to bring conditions to the point where they will be closer to the personal comfort of the employees. Even in the glass industry, in which extreme high temperature is normal, it has been found good practice to install air cooled walls to absorb some of the radiant heat.



Architect's rendering (sketch above) of General Electric Company's recently completed Light Military Electronics Plant at Utica, N. Y. At right: one of several "Freon" compressors for altitude test chambers. There are also six 60 H.P. compressors for conditioning the office building. Compressors are of General Electric manufacture.

In atmospheres containing volatile solvent vapors, particularly where there is a high concentration of such gases, good practice is to have two or three air changes per minute. In addition, the relative humidity is increased to 50 or 60 per cent to avoid dangers from possible explosion, where such vapors are present in explo-

sive proportions.

Many accidents at machines are due to repetitive hand movements inducing drowsiness. Air conditioning has cut accidents and careless operation due to such causes, and has even bettered production.

## MECHANICAL EQUIPMENT

Although industrial plants have more commonly been served from central air conditioning systems, the use of self-contained or packaged units is looked upon with increasing favor.

1. It has minimized the use of costly ductwork.
2. Where processing can be concentrated by component steps, it is possible to supply each area or process with its special air conditioning from individual unitary equipment.

It is also possible to eliminate excessive duct systems by piping chilled water that is cooled by a central refrigerating system through multiple unit coolers. These unit coolers generally consist of fans, chilled water coils, heating coils and filters. With such a system, the chilled



"Climate Room" (top photo) for testing electronic equipment in temperatures as low as -76 F., readily obtained with "Freon-22." Bread cooler (below) in modern bakery cuts cooling time from several hours to 80 minutes!

water piping is frequently used to supply hot water to the units for space heating during the winter.

## CLEAN AIR

Filters are a must with a system supplying air, particularly where a high degree of air cleanliness is necessary. The procedure is to pass air through filters before it passes through finned cooling or heating coils so that dust will not collect on fins to decrease the heat transfer.

The filter may be an air washer using a water spray; dry or oil-impregnated filters of glass or metal fibers; dry paper or electrostatic filters. Where even the finest dust particle must be removed, as in the manufacture of electronic equipment or pharmaceutical products, electrostatic filters are used. For average conditions, the other types will give good results.

## INDUSTRIAL AIR CONDITIONING

In pharmaceutical plants, pills are made in air conditioned rooms to control the quality of the coating applied. Air conditioning of all areas where sterile operations are performed is almost a "must."

Air conditioning for textile processing plants is designed to maintain an effective temperature of from 78° to 80°F. Such temperatures are comfortable for the operators and they permit a range of dry and wet bulb

temperatures correct for the type of fibers used.

In the manufacture of ball bearings, air is held at 34 to 36 per cent relative humidity and 74°F. temperature for the final inspection and packing areas. While it is possible to use a lower relative humidity, this range has proved to be most satisfactory.

In the manufacture of hard candy, temperature is held from 75° to 80°F. and relative humidity from 30 to 40 per cent. In the production of chocolates, temperatures in the hand-dipping room vary from 60° to 65°F. and relative humidity, from 50 to 55 per cent. Chewing gum is made in rooms held at 77°F. and 33 per cent relative humidity.

For precision machining, particularly in special assembly rooms, temperature is from 75° to 80°F. and the per cent relative humidity, from 35 to 50.

Thermo-setting moulding compounds (plastic industry) are handled in rooms of 80°F. and 25 to 30 per cent relative humidity.

During the production of cigars and cigarettes, the air temperature is from 70° to 75°F., and the humidity from 55 to 65 per cent. During the softening of the tobacco, the temperature is 90°F. and from 85 to 88 per cent relative humidity; stemming or stripping, 75° to 85°F. and 70 to 75 per cent relative humidity.

\* \* \*

While the ramifications of industrial needs are too complex to treat the subject of air conditioning in detail in a paper of this length, it can readily be seen from Mr. Waterbury's article, that air conditioning is essential in almost every industry. Although specific requirements will vary in each case, controlled conditions of temperature, humidity and refrigeration remain basically the same.

It has become well recognized in many industries that quantity and quality of production output are directly influenced by working conditions and the comfort of individual employees. Today, management generally looks upon air conditioning in the light of a production tool which, in many instances, may be fully as important as light, heat and plumbing facilities.

Because the installation of a system frequently represents a sizeable investment, you can render a valuable service by recommending equipment designed to operate with Du Pont FREON® fluorinated hydrocarbon refrigerants. These refrigerants are ideal for industrial systems of every size and for every purpose. They are safe . . . nonflammable, nonexplosive, virtually nontoxic and are produced in strict accordance with intricate, laboratory-controlled methods that insure quality and uniformity. They contribute to the economical, satisfactory operation of the machines over long periods of time. In addition, "Freon" refrigerants meet all building-code requirements. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div., Wilmington 98, Del.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

## "FREON" SAFE REFRIGERANTS



"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants



### HOUSING BILL PASSED — PRESIDENT GETS POSER

THE 1953 HOUSING BILL sent to the President last month for his signature extended for one year most of the government's housing program and left up to the President the thorniest question put before the Congress in the course of the debate on the bill — whether or not to lower down payments on government-

insured mortgages. The bill gave the President authority — which the Administration had not requested — to lower to not less than five per cent down payment requirements on mortgages insured by the Federal Housing Administration or guaranteed by the Veterans Administration and to extend the repayment period from 25 to 30 years if he thinks such moves are necessary to stimulate home building. Although the

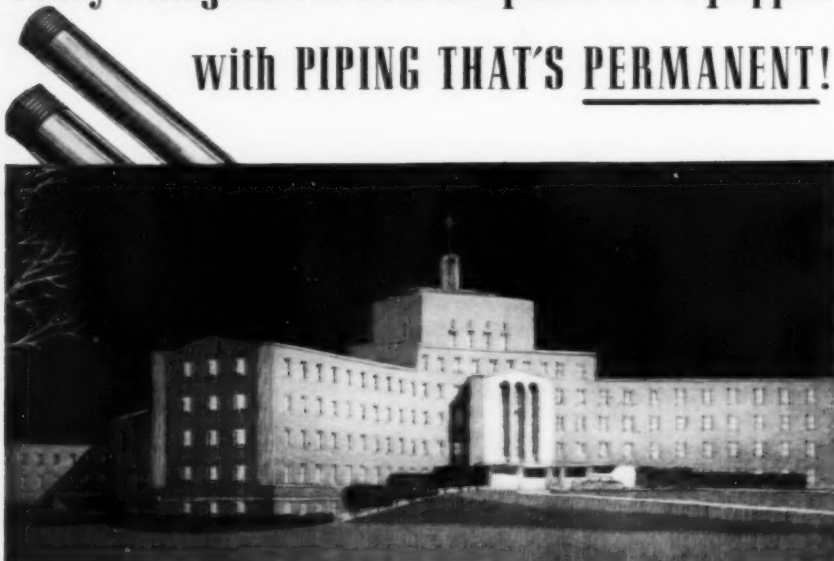
authority was permissive, not mandatory, and although lower down payments had been expressly excluded from the Administration's housing bill recommendations as "inflationary," industry groups like the National Association of Home Builders which had been battling for the downward revision were expressing a cautious jubilation on the theory that the President would be more receptive to the idea now that Congressional concern had been expressed.

On another controversial point, Congress revoked the May 18 order of the Veterans Administration requiring builders to certify to the agency that they have not or will not pay nor absorb, directly or indirectly, any charges or fees in excess of those authorized by VA.

The bill also increases by \$1.5 billion the present \$13.2 billion available for insurance of the regular FHA sale and rental insurance program and authorizes the Federal National Mortgage Association to sell and buy mortgages on a "one-for-one" basis, up to a \$500 million limitation.

(Continued on page 38)

## Today's magnificent new hospitals are equipped with PIPING THAT'S PERMANENT!



Architect's Rendition of Resurrection Hospital, Chicago. Architects: Schmidt-Garden & Erikson. Plumbing Contractor: Fettes, Love & Sieben. Clow (threaded) Cast Iron Pipe for all downspouts, wastes and vents.

### Clow (threaded) Cast Iron Pipe adds permanence to all buildings

The newly-constructed hospitals so desperately needed today will play a vital part in the good health of Americans for decades to come.

These important buildings *must* be built for permanence. That's why more and more architects and contractors choose Clow (threaded) Cast Iron Pipe for the downspout, vent, and waste lines in today's hospitals. They know that because of its great resistance to corrosion, Clow piping will last the life of the building. They prefer Clow pipe, too, because of its low installation cost.

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#### A COMPLETE LINE FOR ALL PIPING NEEDS

Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8 and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random lengths in 4, 6 and 8" sizes.

Clow Cast Iron Pipe  
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be ...



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tools of the piping trade.

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James W. Follin has succeeded Nathaniel S. Keith as director of the Division of Slum Clearance and Urban Redevelopment of the Housing and Home Finance Agency. Mr. Follin's numerous government services have included, besides his most recent post as director of the office of contract settlement of the General Services Administration, chairmanship of the subcommittee on building construction of DPA's Conservation Division and the organization and early direction of the Construction Controls Division of NPA. He is a former managing director of the Producers' Council.

# THE LEADERS OF INDUSTRY



Ford Motor Co. new foundry and engine plant at Cleveland, Ohio.



## ... use **SARCO** heating specialties

WHEN large industrial projects are planned, leading architects and engineers design the buildings and select the equipment, and many top executives must approve the specifications.

Sarco is proud to be listed in so many of these top rank industrial specifications, covering steam traps of several types, radiator valves and strainers for space heating and air conditioning as well as temperature controls for process work and hot water supply.

For example, at Ford Motor Company's new plants in Cleveland, Sarco Specialties are installed throughout.

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### A FEW OF THE WORLD LEADERS WHO USE SARCO PRODUCTS IN THEIR NEW PROJECTS ARE:

U.S. STEEL CO.	Sarco	✓
WESTERN ELECTRIC CO.	Sarco	✓
FORD MOTOR CO.	Sarco	✓
BETHLEHEM STEEL CORP.	Sarco	✓
PRATT & WHITNEY AIRCRAFT	Sarco	✓
ALUMINUM CO. OF AMERICA	Sarco	✓

Sarco  
Type H Radiator Trap

Sarco No. 1141  
Radiator Valve

Sarco Type FT  
Float-Thermostatic  
Trap

Sarco Type BMS  
Inverted  
Bucket Trap

Sarco Pipe  
Line Strainer

Sarco Type 24-30  
Temperature Regulator

406

**SARCO** saves steam  
sarco quality assures satisfaction

## THE RECORD REPORTS

Also extended for one year: FNMA authority to make advance commitments to buy defense, military and disaster housing mortgages and FHA authority to insure mortgages under the military housing program and for defense housing in the same "critical defense areas" now designated.

The mandatory federal warranty on all builders of FHA and VA housing, bitterly fought by all the industry

## WASHINGTON (Cont. from p. 36)

groups, was rejected by the House-Senate Conference Committee.

## HOUSING POLICY REVIEWS BY MANY GROUPS STARTED

The first of a series of "shirtsleeve" conferences to develop a new policy of operation for the Housing and Home

(Continued on page 266)

PROCTER & GAMBLE  
Kitchen  
Miami Valley  
Laboratories  
Venice, Ohio



F. A. Fairbrother • George H. Miehl  
Architect and Engineer  
Albert Kahn Associated Architects and  
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★ Here's fresh evidence for food service men and their architects of the value of Van equipment. Ivorydale 1919, Port Ivory 1920, and a whole parade of employee cafeterias Van-equipped since . . . Chicago, St. Louis, Kansas City, Ivorydale, Cincinnati General Offices, Venezuela, Philippines, and now this gleaming all-stainless kitchen in one of the chemical industry's most modern research laboratories.

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## RECENT PUBLICATIONS

### Data on Airport Terminals

AIRPORT TERMINAL BUILDINGS" is the title of a new booklet published by the Office of Airports, Civil Aeronautics Administration, U. S. Department of Commerce (25 cents, from the Superintendent of Documents, Washington 25, D. C.).

The 42-page brochure, illustrated with schematic drawings, covers area requirements and building space relationships; the method of master planning for the airport building areas; and various systems for handling the flow of passengers, baggage, mail, express and cargo, and airport spectator traffic.

### Building in the Tropics

"HOUSING AND BUILDING in Hot-Humid and Hot-Dry Climates" (\$6, from BRAB, 2101 Constitution Avenue, Washington 6, D. C.), the complete report on the proceedings of the Fifth Research Correlation Conference of the Building Research Advisory Board last November, is now available.

The report includes 17 papers by leading specialists in the field of building for hot climates as well as panel discussions and comments from members of the audience. The physiological and bioclimatic aspects of tropical living are considered in the first session and the remaining three sessions are devoted to architectural solutions, studies of structures and materials for hot climates and the various ways of utilizing mechanical means to produce efficiency and comfort. There are some 130 illustrations, plus graphs and tables.

### Reports on Shelter Tests

THE FEDERAL CIVIL DEFENSE ADMINISTRATION has now issued a preliminary report on "Operation Doorstep," the March 17 atomic test on "typical" houses ("Operation Doorstep," 25 cents, from Superintendent of Documents, Washington 25, D. C.). The report describes extent of damage to basement and outdoor shelters and to the structures of each of the houses. FCDA has also issued an 86-page technical manual, "Home Shelters for Family Protection in an Atomic Attack" (30 cents, from the Superintendent of Documents, Washington 25, D. C.) intended to advise the layman on how to build home shelters. Information is based on results of the March 17 tests.



# Passenger Elevators

For architectural beauty, construction economy, low operating costs

## No penthouse or heavy sidewalls needed

There are several very good reasons why Oildraulic Passenger Elevators are the most practical and economical type to specify within their ranges of travel and speed.

## Architectural advantages

The elevator car and its load are supported by the hydraulic system—not the building structure. This makes unnecessary the costly, unsightly penthouse that interferes with modern architectural design. It also permits a substantially lighter shaftway structure. Rotary's compact electric power unit can be located in any convenient spot on any landing, or placed in an area with other mechanical equipment.

## Operational advantages

The revolutionary Rota-Flow power system guarantees quiet, efficient operation and low operating costs. Because of simple design and construction, maintenance on an Oildraulic Elevator is also remarkably inexpensive.

Through the use of hydraulically operated control system (electrically actuated) and automatic leveling, smooth starts and stops and accurate landings are guaranteed. Automatic leveling is standard equipment on all Rotary Passenger Elevators, and costs less than automatic leveling on other types of elevators.

## Coast-to-coast service

With over 75,000 Oildraulic Elevators and Lifts now in use, Rotary offers the most complete service in the oil-hydraulic elevator field. Look under "ELEVATORS" in your Classified Phone Directory or write us for the name and address of our distributor near you. They will gladly assist you on elevator plans and specifications.



## Oildraulic Passenger Elevators



Write for new Catalog RE-307

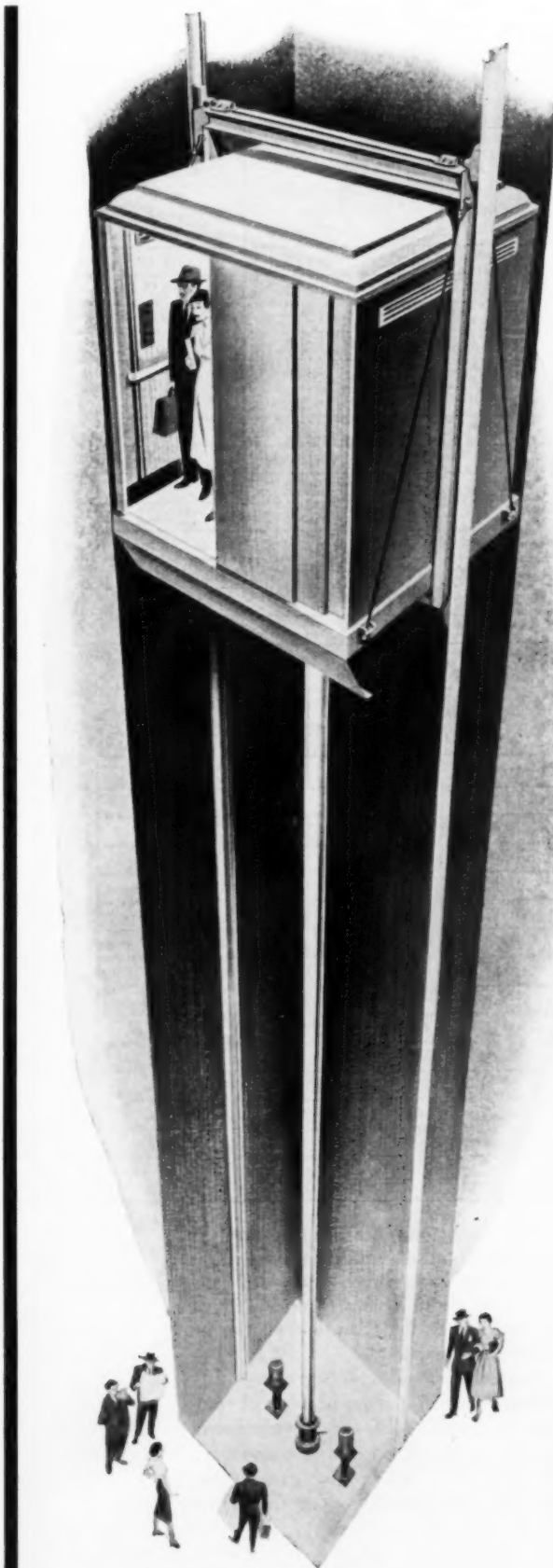
It's the most complete and helpful booklet ever issued on oil-hydraulic elevators for passenger service.

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**ROTARY LIFT CO.**

1010 Kentucky, Memphis 2, Tenn.

*Specialists in modern oil-hydraulic elevators*



## THE RECORD REPORTS

# CONSTRUCTION COST INDEXES

## Labor and Materials

United States average 1926-1929=100

Presented by Clyde Shute, manager, Statistical and Research Division,  
F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

### NEW YORK

### ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Brick and Steel		Residential	Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Brick and Steel	
	Brick	Frame		Concr.	Steel	Brick	Frame	Concr.	Steel
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.0	86.1
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	95.1	87.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	96.9	97.4
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	136.8	98.5
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	158.1	136.4
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	178.8	157.1
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	180.6	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	185.4	180.8
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	204.2	183.7
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	88.6	202.8
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1
Mar. 1953	278.9	275.4	274.9	279.0	274.2	221.7	223.3	217.9	218.4
Apr. 1953	278.9	275.4	274.9	279.0	274.2	221.7	223.3	217.9	218.4
May 1953	277.7	274.5	273.5	278.5	272.8	221.7	223.3	217.9	218.4
% increase over 1939									
May 1953	124.9	124.3	109.3	108.8	109.7	156.9	168.7	129.1	124.2

### ST. LOUIS

### SAN FRANCISCO

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7
Mar. 1953	261.1	254.0	255.2	263.5	254.6	252.3	246.7	250.4	253.9
Apr. 1953	261.1	254.0	255.2	263.5	254.6	252.8	247.1	251.4	255.4
May 1953	262.3	254.2	258.1	268.0	258.1	252.3	246.4	251.4	255.6
% increase over 1939									
May 1953	138.0	137.6	117.4	123.7	116.9	138.9	148.1	114.1	109.7

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

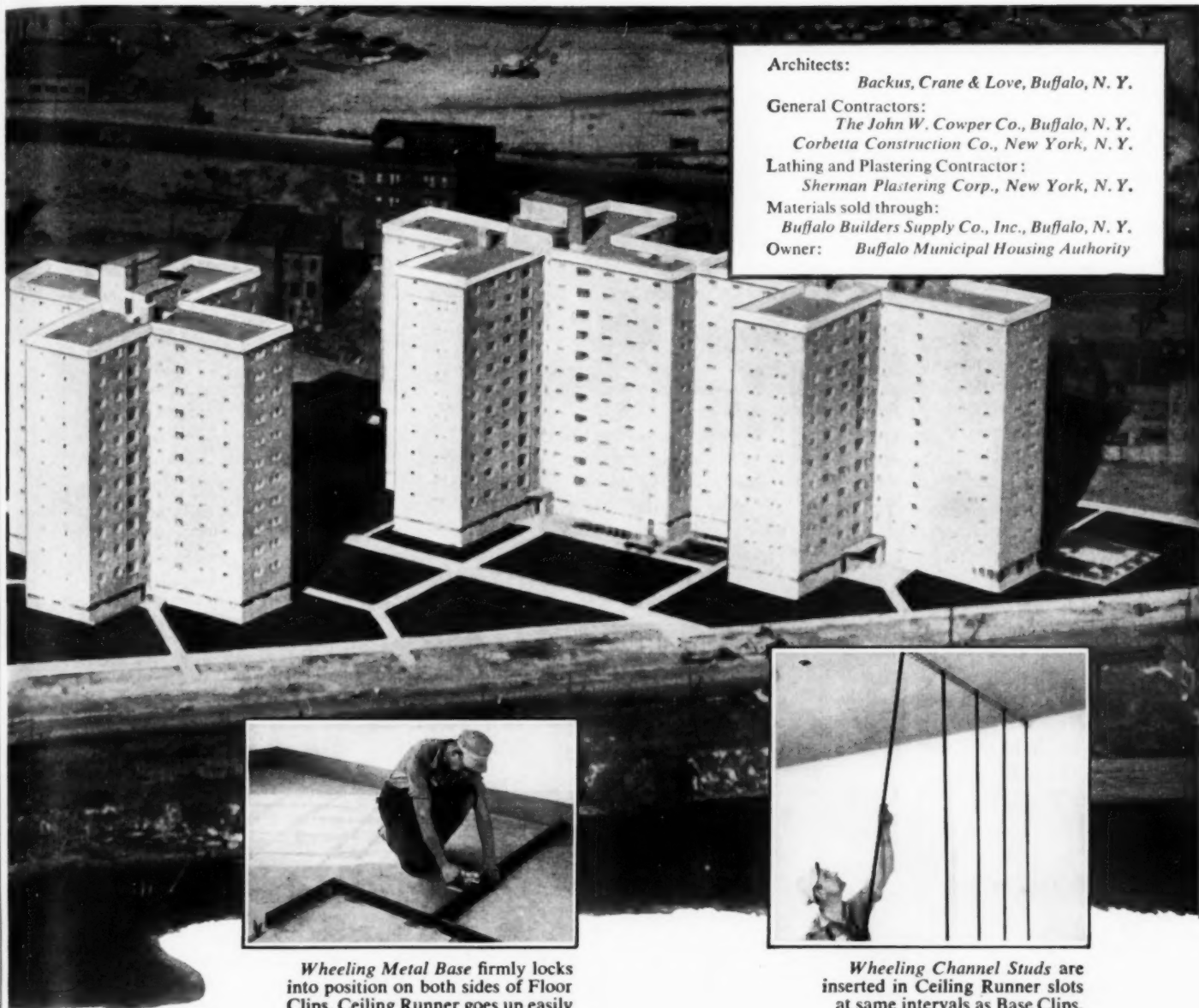
index for city A = 110  
index for city B = 95  
(both indexes must be for the same type of construction).  
Then: costs in A are approximately 16 per cent higher than in B.

$\frac{110-95}{95} = 0.158$   
Conversely: costs in B are approximately 14 per cent lower than in A.  
 $\frac{110-95}{110} = 0.136$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

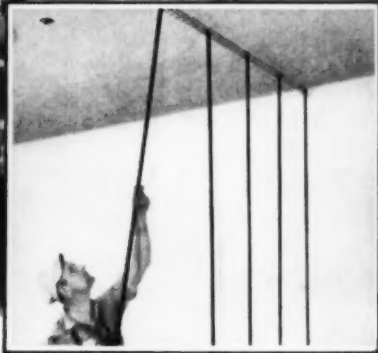
These index numbers will appear regularly on this page.



Architects: *Backus, Crane & Love, Buffalo, N. Y.*  
 General Contractors: *The John W. Cowper Co., Buffalo, N. Y.*  
*Corbetta Construction Co., New York, N. Y.*  
 Lathing and Plastering Contractor: *Sherman Plastering Corp., New York, N. Y.*  
 Materials sold through: *Buffalo Builders Supply Co., Inc., Buffalo, N. Y.*  
 Owner: *Buffalo Municipal Housing Authority*



*Wheeling Metal Base firmly locks into position on both sides of Floor Clips. Ceiling Runner goes up easily using stub nails or rawl drives.*



*Wheeling Channel Studs are inserted in Ceiling Runner slots at same intervals as Base Clips.*

**PARTITIONS**

*The Wheeling line of building materials includes: Steelcrete Reinforcing Mesh, Expanded Metal, Metal Lath and Metal Lath Accessories, Metal Base, Tri-Rib Steel Roof Deck, ExM Angle Frame Partitions and Steelcrete Vault Reinforcing.*



*Wheeling Metal Lath ties flat to Channels with Wheeling Hank Tie Wire. Plaster is applied on both sides to form an effective solid partition.*

**WHEELING, WEST VIRGINIA**  
 NEW YORK PHILADELPHIA RICHMOND ST. LOUIS





## REQUIRED READING

### TOWN DESIGN

*Town Design.* By Frederick Gibberd. *The Architectural Press* (London, England). Reinhold Publishing Corporation (New York, N. Y.), 1953. 8¾ by 11 in. 300 pp., illus.

REVIEWED BY JOHN RANNELLS, A.I.A.

TOWN PLANNING is so big a field in which so many different specialists must work together that the architect hardly knows where he fits into it and how much of it he should try to comprehend. Even less is the role of the architect understood by the others concerned. By focusing on *Town Design* as the peculiar province of the architect, Frederick Gibberd clarifies the issue for specialists and public alike.

This is a full, rich study, directed especially toward the present town planning needs in England but drawing upon examples throughout Europe and America. Its lessons are as applicable to planning problems in this country as they are to those in Great Britain —

perhaps more so, for we have no such generally understood sets of concepts on which to base our planning (and redevelopment) goals as have been worked out in recent years by the British. This book owes much to the shared experiences of whole groups of architects and planners, working together with sociologists, geographers, economists and government people. The author had a prominent place in this experience as architect and planner in a number of new towns and reconstruction of urban centers.

Town design is concerned with everything we see in the urban picture and goes on after the planning job is completed — it scarcely begins, in fact, until after the planning is well along. The importance of design is continually being stressed in architectural publications but the visual relationships of the *entire* scene are rarely covered. It is one of the special virtues of the present work that architecture is put into context with the entire urban scene — as it exists, not as the architect would like it to be. In the process, some limitations of architecture

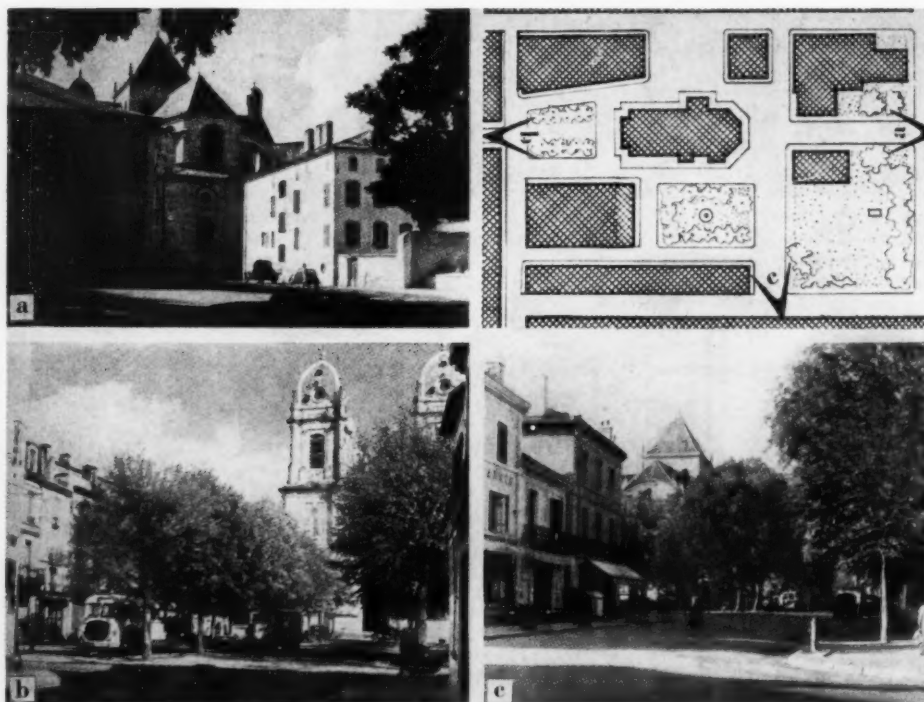
as practiced are exposed — but all to the good, for broader fields are opened for architects. According to Gibberd: "The co-relation of the raw materials of town design is usually ignored today, with the consequence that there is a wide gap . . . between town planning and the design of the individual object. The art of architecture, for instance, has tended to become withdrawn from the art of town design and has turned in on itself, the architect regarding his buildings as being an abstract composition with an existence independent of its surroundings."

This book will be most useful to architects and planners as a reference volume and text. Those without technical training who are interested in the urban scene and need to be shown what can be done will be attracted by its readability and illustrations. There are many hundreds of photographs (mostly by the author, taken all over Europe) and plans and diagrams — all illustrating the argument of the text. Visually, it is a handsome picture book but it is a picture book that has to be *read*.

The text (and illustrations) play back and forth between general underlying considerations and specific design; theory and practice are kept always in balance. At the end of each main part, *Design of the Complete Town*, *Central Areas*, *Industry*, *Housing*, there is an *Analysis* section in which typical examples are studied, both for their own interest and as examples of theories set forth in the previous chapters.

In Part One, consisting of two brief chapters on *The Town and its Raw Materials* and *The Master Plan*, the author sets out the functioning elements which are to be later elaborated. The economic and social basis for planning is taken for granted — referred to continually but not elaborated. The author begins where the architect enters. He begins with towns as they are and as they can be shaped for those who use them. "Most towns today have a characteristic functional pattern as follows: a central core containing the principal shopping centre, civic group and business zones; surrounded by suburbs of houses, often each with its own character and each with its own shopping centre and other social services; and areas of industry, some of which are generally associated with the town centre and some with the railway. That the pattern is confused by

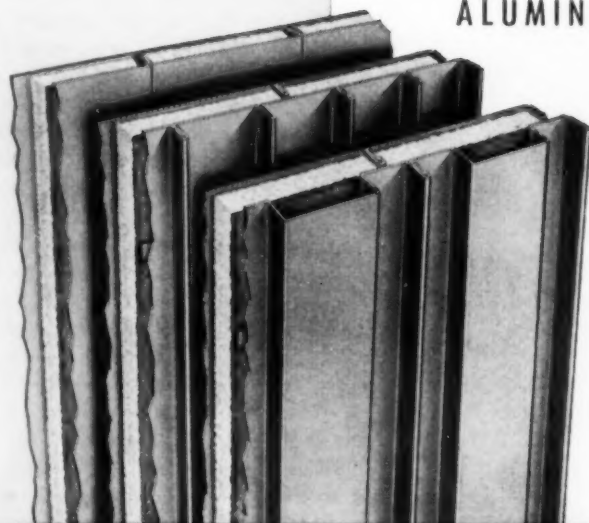
(Continued on page 48)



*The English cathedral is often too open, and the European ones are often too enclosed, but in the central area of Dax, there is a balance between the cathedral as a three-dimensional crown and the spaces as open-air rooms. However, there is a change in function and size between the spaces, giving them marked individual characteristics — in all cases the spaces hold their own as places to be in, rather than just settings for façades. From "Town Design"*

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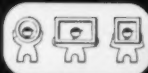
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## REQUIRED READING

(Continued from page 46)

different kinds of buildings being mixed together; that it is disrupted by traffic; and that it tails off into an indiscriminate mixture of town and countryside, does not mean that in essence it is not a fundamentally sound one for the way of life of the people using it. Proposals that run contrary to it, such as le Corbusier's for concentrating people into vertical garden cities (Nemours, Hellocourt, Zlin) or Frank Lloyd Wright's for spreading them out in one-acre small holdings (Broadacre City) would not be regarded with any favour by the majority of townsmen."

Part Two, Central Areas, is the fullest and richest. It might be briefly described as an elaboration of Sitte's *Art of Building Cities* brought down to date. The author acknowledges his indebtedness to Sitte, also Hegemann and Peets' *Civic Art* but to this reviewer his presentation is superior to both because of his successful inclusion of all the hustle of modern urban life with considerations of formal architecture.

Separation of pedestrian and vehicular traffic without loss of function is the goal, but the author is too wise and experienced to expect "pure" solutions. At the beginning of the chapter on Civic Spaces he says: "We have suggested, and are prepared to go on suggesting *ad nauseam*, that this may only be done by rejecting the familiar all-purpose road — cars, pedestrians, car parking, building frontage — and designing in terms of three principal types of space: roads running in between the precincts; areas for car parking; and spaces about which buildings are grouped. That these types of spaces intermingle, making it impossible to obtain a complete segregation of the three functions, we do not dispute; all we wish to do is to establish this approach to design."

The business of separating different uses into separate "precincts" is no doubt good in principle but in practice it is one of the weak spots in planning. City activities are just too mixed and changing to be altogether conformed. This is recognized by the author in a brief chapter in Part Three "Work Shops and Service Areas." These are always found in the center of town.

There is a very fine chapter on shopping centers as they occur in central areas, as they have developed everywhere through competition for frontage

(Continued on page 50B)





*The pleasant village green was a focus for community life in colonial America. Top, Northampton; center, Taunton; right, Boston common; bottom, New York's Bowling Green*

## FIVE CIVIC CENTERS IN SOUTH AMERICA

*Recent work by Paul Lester Wiener and José Luis Sert*

FOR CENTURIES people have gathered in the Agora, the Piazza, the market place, the village green. They come to see others and be seen, to stroll or sit, to make new friends, to discuss sports or politics, to celebrate special occasions. This urge to get together has existed in every town, large or small, through history.

In designing these civic centers, Wiener and Sert have regarded as basic the satisfying of this desire to gather and participate; and have also followed as guiding principles that pedestrians should take precedence over traffic and commerce; that scale should be in terms of walking distance; that attractive and controlled development should supplant the haphazard, purely commercial, and often unsightly visage of "Main Street."

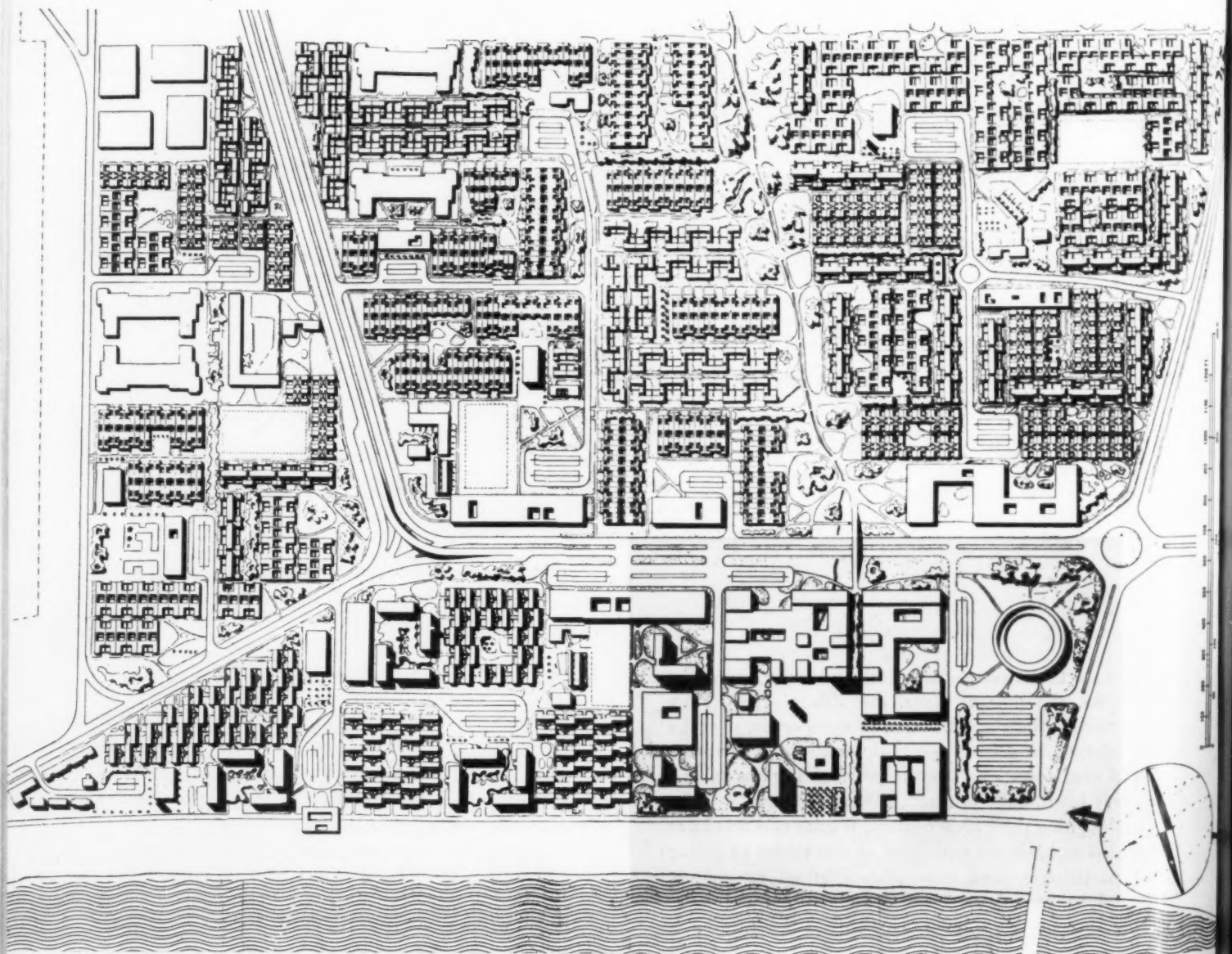
During the ten years past, Wiener and Sert have planned eight South American cities. Telling that whole story would require many more than the sixteen pages on civic centers which follow. In this brief coverage, then, the centers should not be regarded as divorced from their surroundings, but rather as a part of an overall community and regional concept. In some cases the ideal condition, the virgin site, was the planners' compass; in others the difficulties involved in gradually remaking an existing city were part of the problem.

These plans will interest architects since they illustrate the growing concern with our total environment and because the design principles involve a group of buildings — a common architectural problem.

# CHIMBOTE

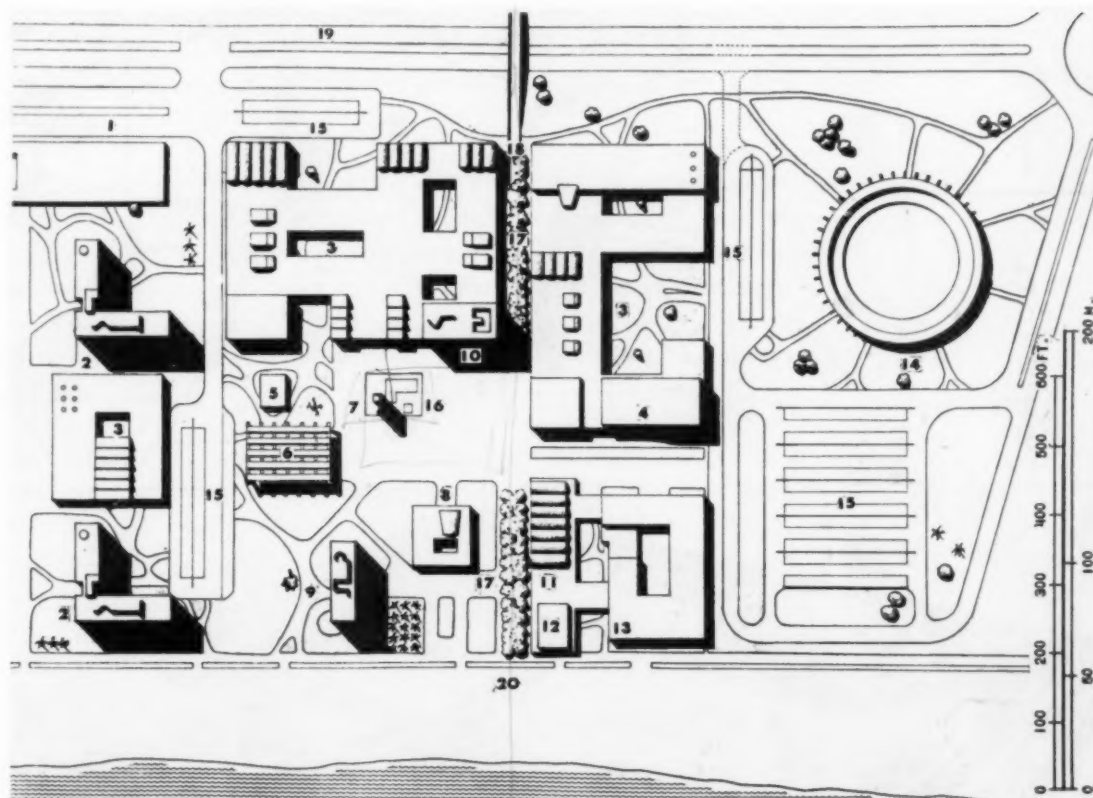
Peru

Paul Lester Wiener and José Luis Sert,  
City Planners and Architects, in collaboration  
with the Oficina de Planeamiento y Urbanismo,  
Luis Dorich, director



Located in a practically rainless region of the Peruvian coast, Chimbote at present is an industrial seaport of 12,000, but has been chosen as the outlet for the hydro-electric development of the Santa river (Peru's TVA), which means the future population may reach 40,000. The natural bay and modern port installations will make it an important Pacific harbor. In addition, nearby coal will be mined and industry should flourish on the cheap power. The normally arid soil will be irrigated in order to feed the people.

The plan for the new civic center, below, ingeniously separates pedestrians and vehicles; provides peripheral parking; features a plaza, promenade and beach for its citizens. The scheme is a modern expression of the old colonial "Plaza de Armas."



#### THE CIVIC CENTER

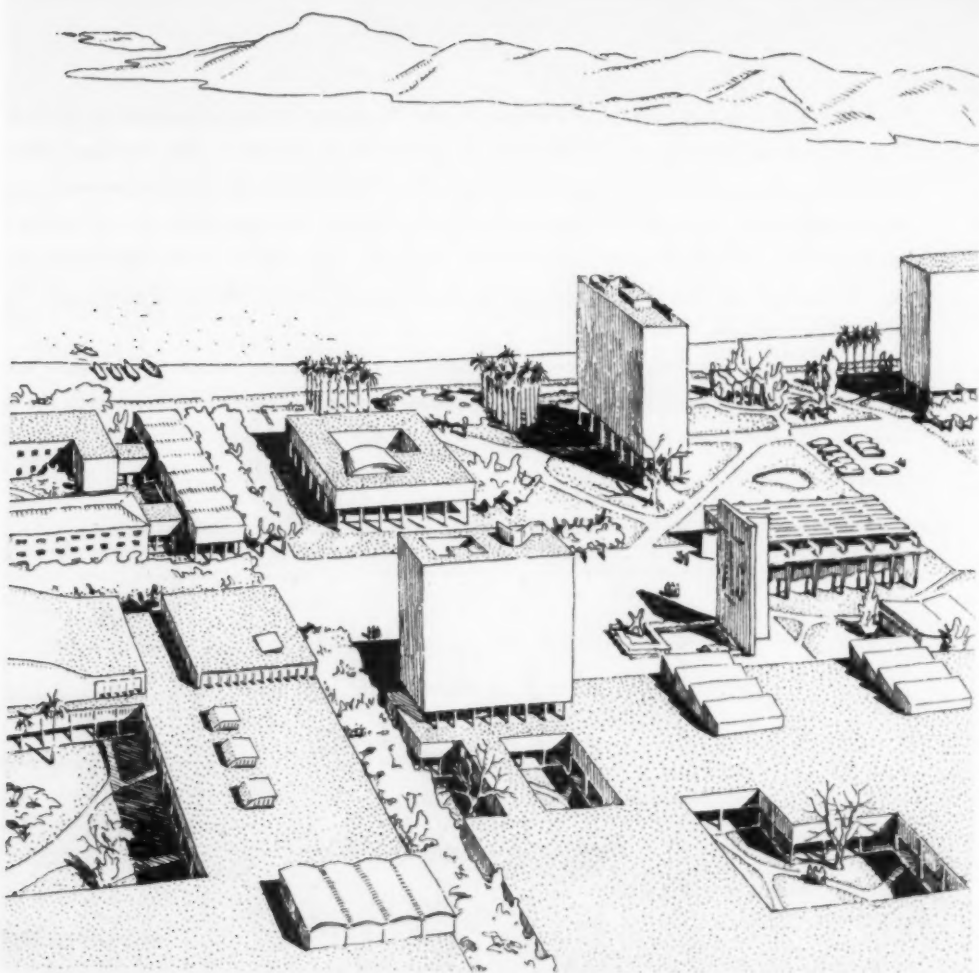
- 1 Bus Station
- 2 7 Story Apartment
- 3 Shops
- 4 Cinema
- 5 Rectory
- 6 Church
- 7 Bell Tower
- 8 Library & Museum
- 9 Municipal Building
- 10 Office Building
- 11 Travel Service
- 12 Cafe
- 13 Hotel Chimú
- 14 Bull Ring
- 15 Parking
- 16 Plaza
- 17 Promenade
- 18 Pedestrian Bridge
- 19 Pardo Avenue
- 20 Beach



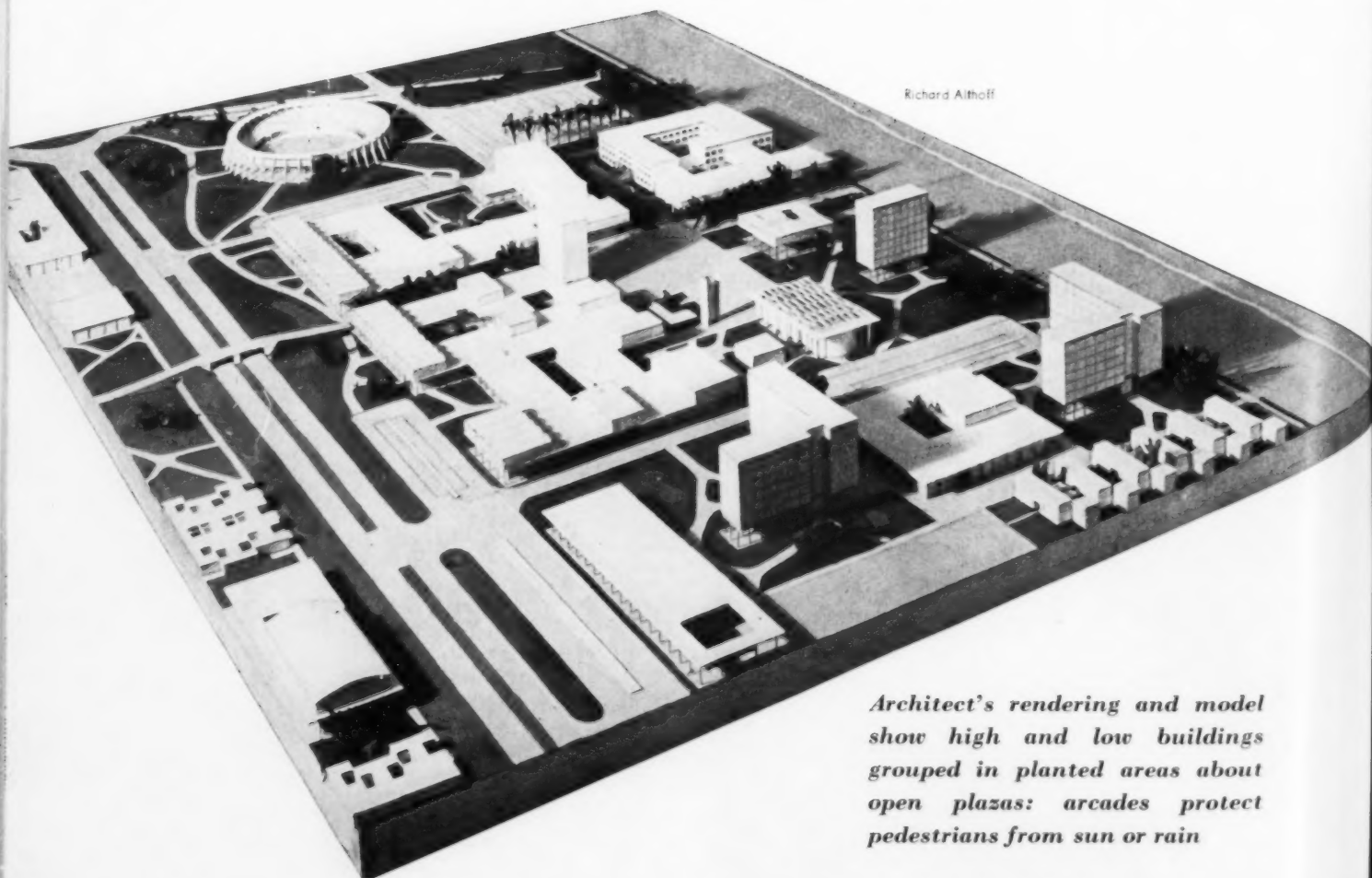


Peru

CHIMBOTE



Richard Althoff



*Architect's rendering and model show high and low buildings grouped in planted areas about open plazas: arcades protect pedestrians from sun or rain*

# LIMA

Peru

Paul Lester Wiener and José Luis Sert,  
City Planners and Architects, in collabora-  
tion with the Oficina Nacional de  
Planeamiento y Urbanismo

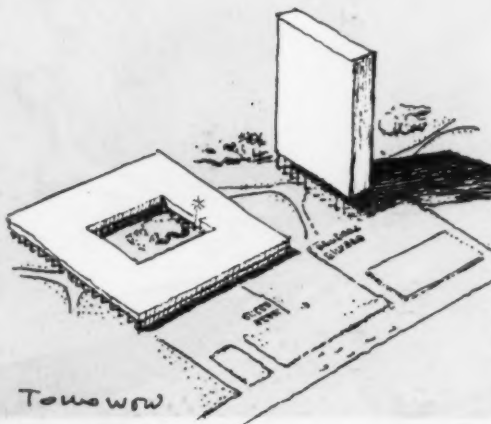
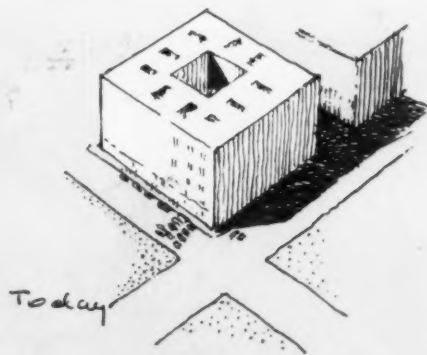
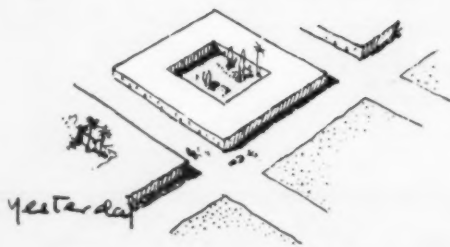
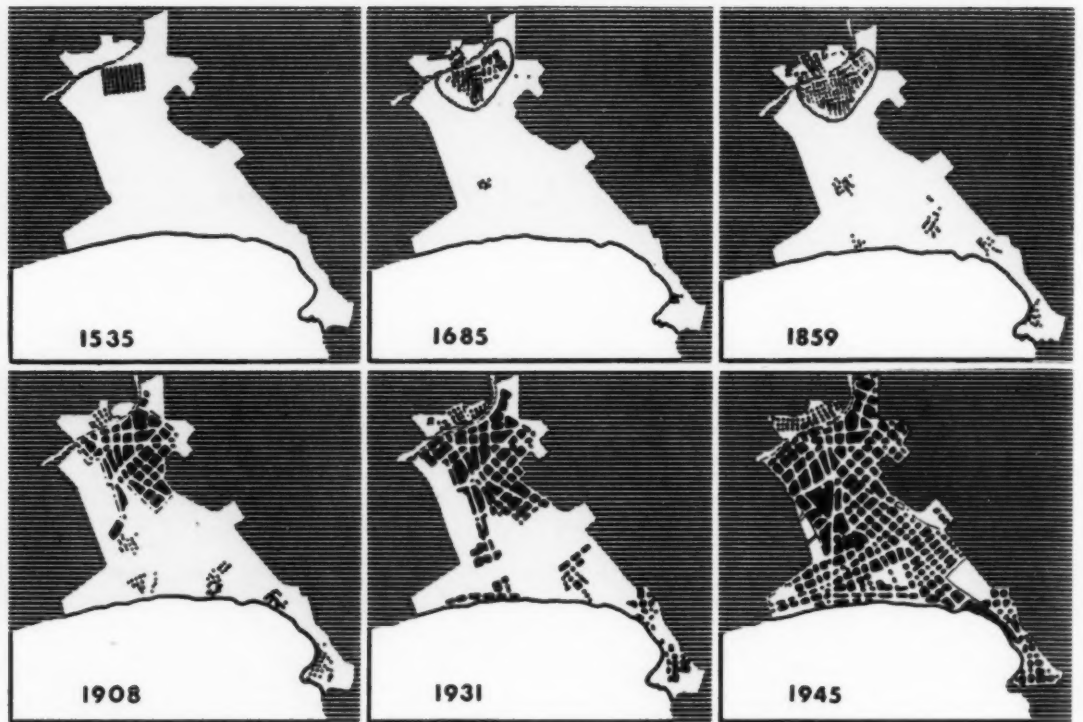
Originally a fortress city built in 1535 (see old map below), Lima has long been a commercial center, and is, of course, Peru's capital. Its nearby port, Callao, is one of the most important in South America, and the old city has expanded in the direction of the Pacific. The ancient fortress walls of colonial times were removed in the late 19th century and replaced by wide avenues. The present population is 900,000 — the master plan foresees growth to 1,800,000.

The new civic center will be built on a 173-acre site in an area of parks, old buildings, and of relatively low land values, but at a point where the principal avenues converge.



Peru

LIMA



Diagrams above show the growth of the city toward the sea. At left, the architects' conception for basic forms and arrangements for city blocks:

Yesterday — the old colonial quadra

Today — the old quadra perverted

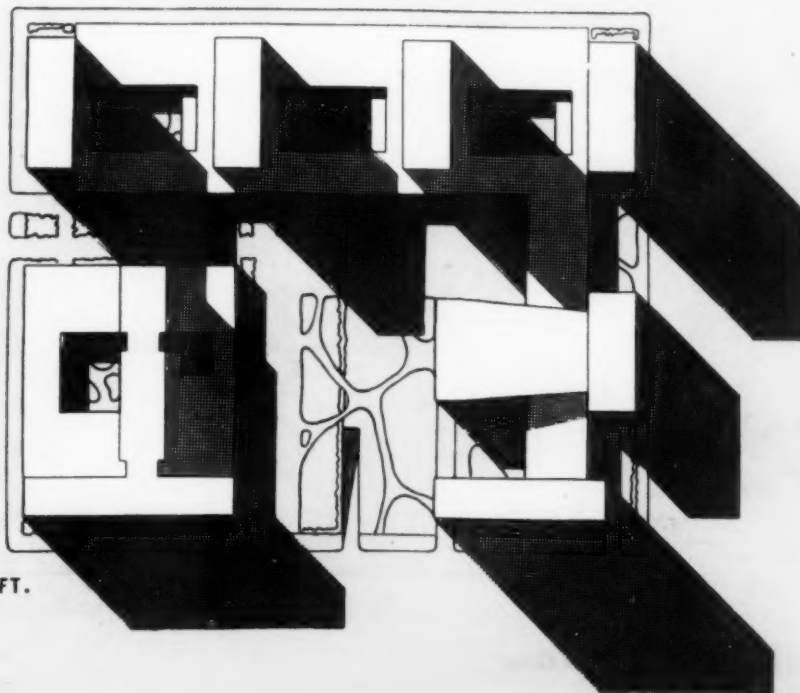
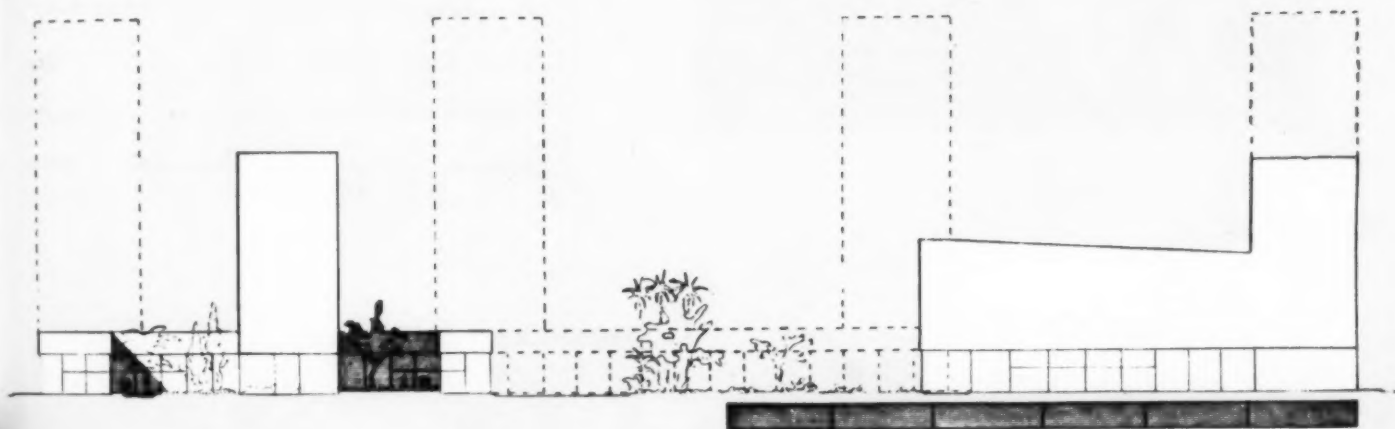
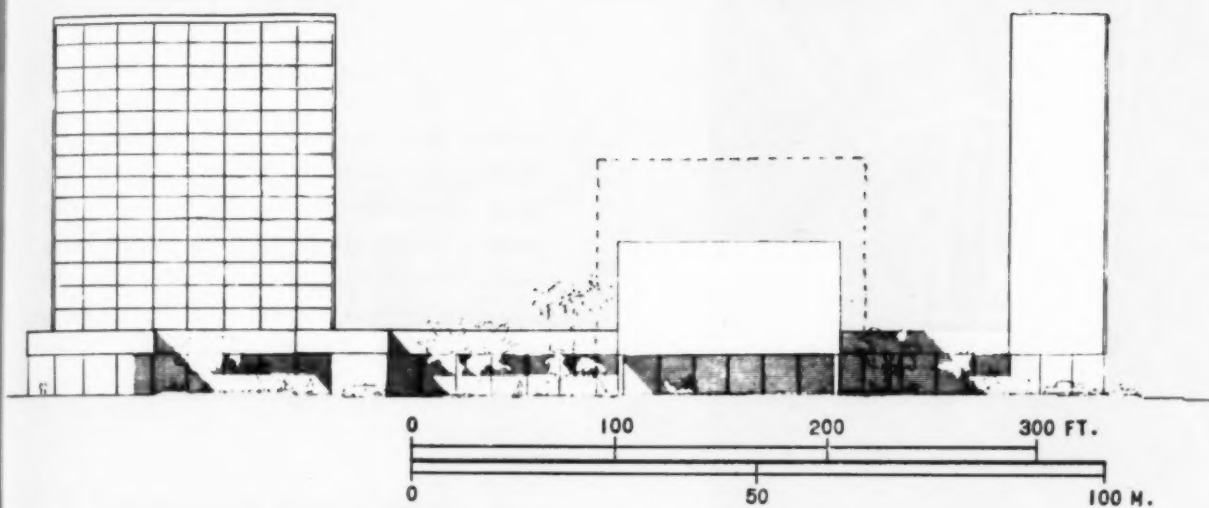
Tomorrow — the new pattern

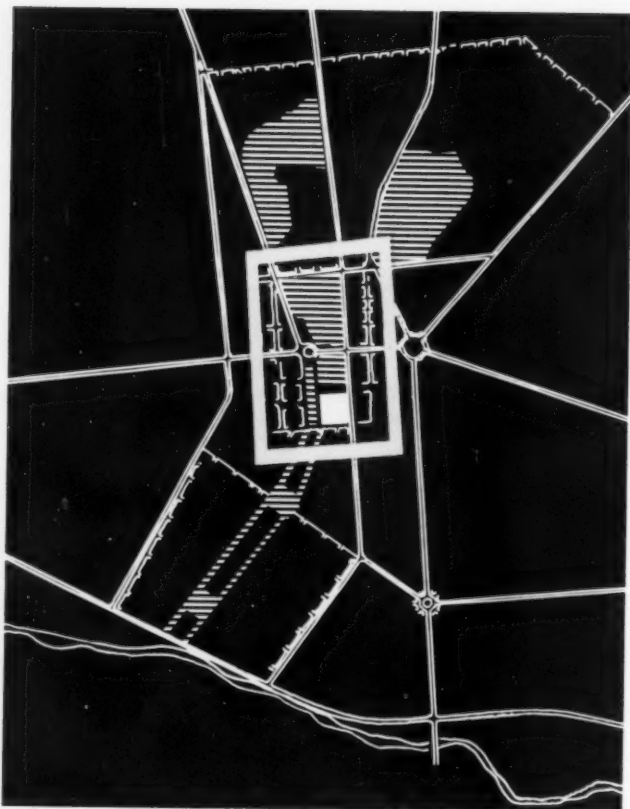
Photo below is a view of central Lima. At right are two sections and a plan of the first phase of new civic center construction, on the old prison site



Photo by courtesy of Panagra







LIMA

Peru

*Serving as a center for the activities of 100,000 persons, the new civic center is a three dimensional contrast in mass between 3-story buildings and 15- or 18-story towers. Concrete slabs on posts will protect pedestrians from sun or rain and arcades will connect shop façades. Small white area on map at left is the old prison site*

#### THE NEW CIVIC CENTER

Existing Buildings: A Courthouse | B Ministry of Public Works

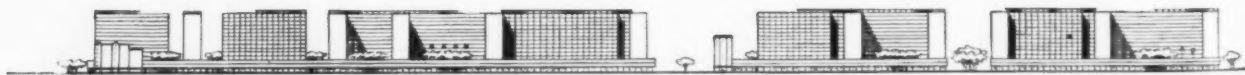
C Italian Museum | D Other Buildings

Proposed Buildings: Ministries. 1 Interior, Justice | 2 Army, Navy, Air

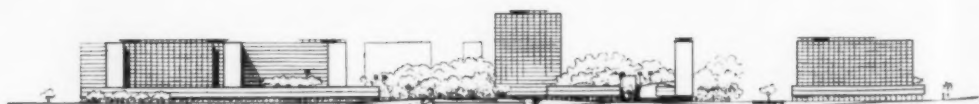
3 Education | 4 Agriculture | 5 Foreign Affairs | 6 Hotel



Elevation on Paseo de la Republica



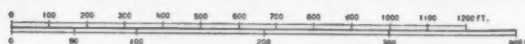
Elevation on Avenue Wilson



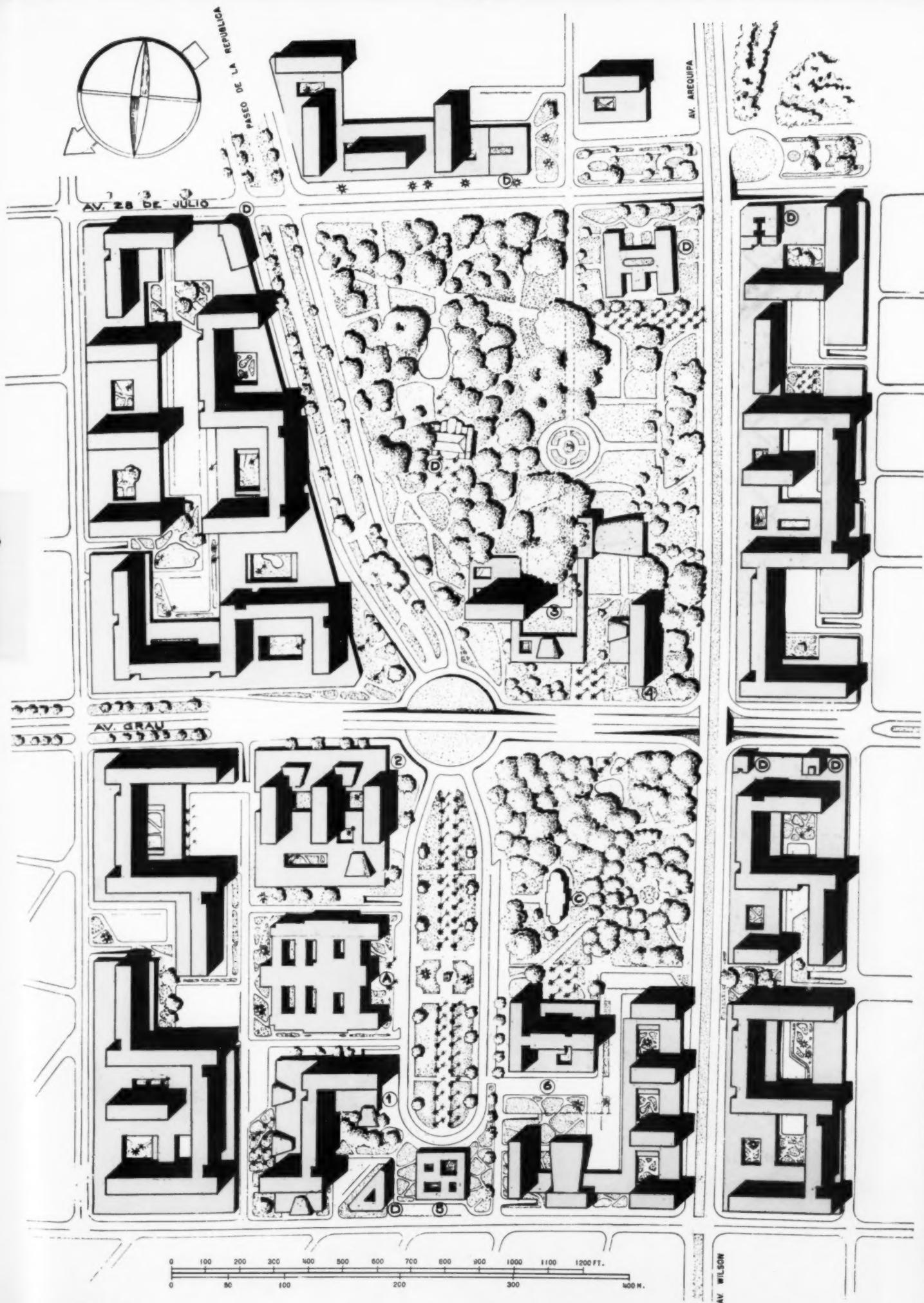
South Elevation on Avenue Grau



North Elevation on Avenue Grau



ARCHITECTURAL RECORD







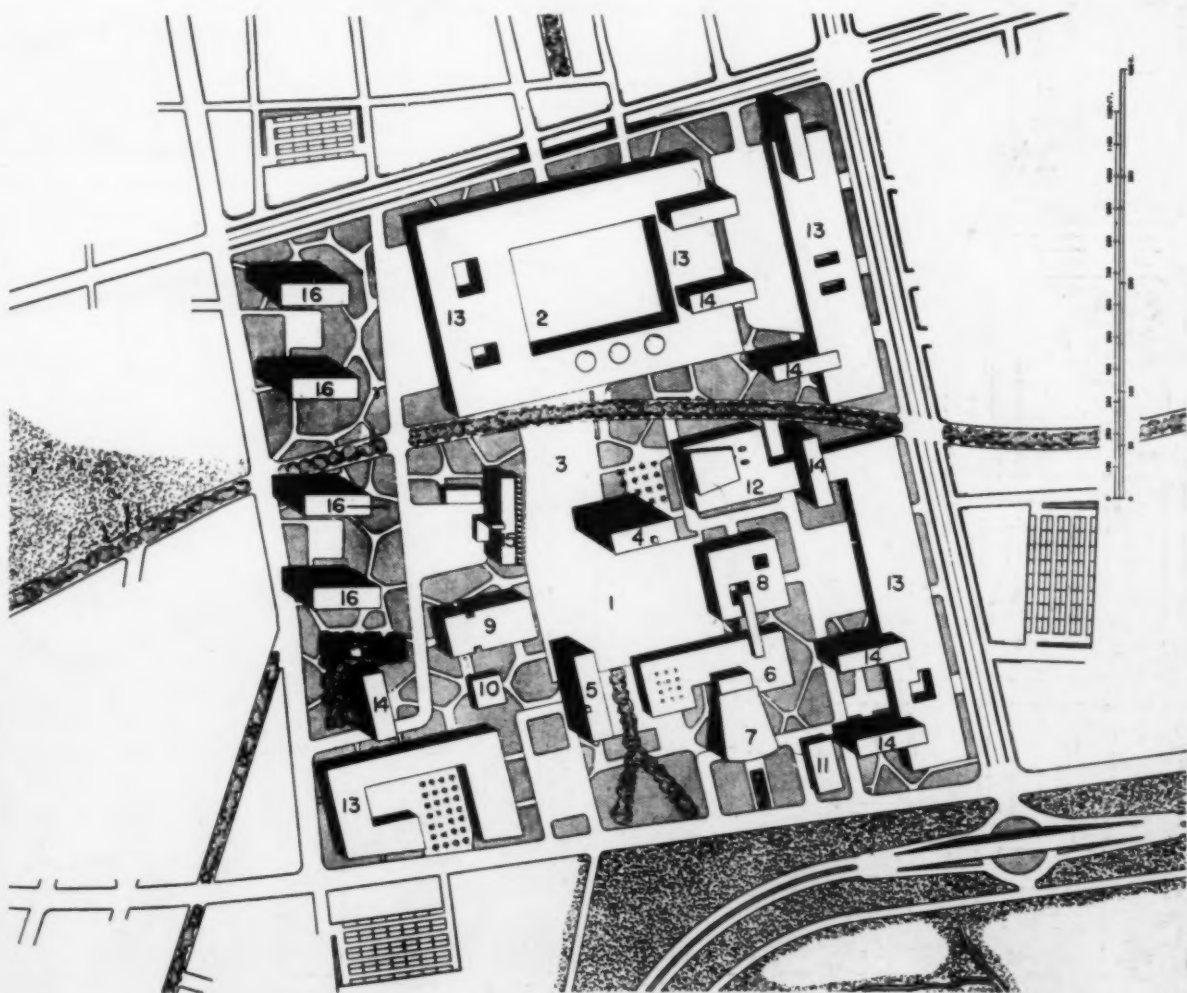
# CALI

Colombia

Paul Lester Wiener and  
José Luis Sert, Architects  
and City Planners

With a present population of 275,000, Cali is both a state capital and a center for commerce and light industry. It is located in a fertile valley and has a tropical though moderate climate. The master plan envisions an eventual population of 750,000 citizens.

The new civic center will be centrally located for easy access from all parts of the city. Its two main sectors, the administrative and commercial, have a varying character but are linked by a mall (3). The administrative buildings (1) are grouped about an open plaza, while the commercial center (2) is an enclosed square bounded by arcades.



- |                     |                     |             |                      |                  |                            |                     |
|---------------------|---------------------|-------------|----------------------|------------------|----------------------------|---------------------|
| 1 New Civic Center  | 2 Commercial Center | 3 Promenade | 4 Municipal Building | 5 State Building | 6 Museum, Exhibition Halls | 7 Municipal Theatre |
| 8 Municipal Library | 9 Cathedral         | 10 Rectory  | 11 Fire Station      | 12 Cinema        | 13 Shopping                | 14 Offices          |
| 15 Hotel            | 16 Apartment Houses |             |                      |                  |                            |                     |





# MEDELLIN | Colombia

*Paul Lester Wiener and Jose Luis Sert, Architects*



## THE NEW CIVIC CENTER PLAN



- 1 Shops
- 2 Office Buildings
- 3 Government Offices
- 4 Library; Conference Hall
- 5 Archeological Museum
- 6 Cinema; Restaurant; Exposition Hall
- 7 Theatre
- 8 Open-air Theatre
- 9 Hotel



With a present population of 250,000 and 700,000 anticipated in 50 years, Medellin is Colombia's second city and chief center for textiles and coffee. The Medellin River forms the axis of the valley city, and its control has been a leading concern of the planners. A series of lakes, dikes, dams, and irrigation ditches will prevent erosion and establish a network of planted areas penetrating the city in the pattern of the large map opposite.

A variety of residential developments, left and below, are planned as districts, each complete with civic, recreational and commercial facilities.

The new civic center will occupy a site on the riverfront now occupied by railroad yards and the public market. Pedestrian and vehicular circulation have been carefully separated; see plan above.





# PUERTO ORDAZ and CIUDAD PIAR

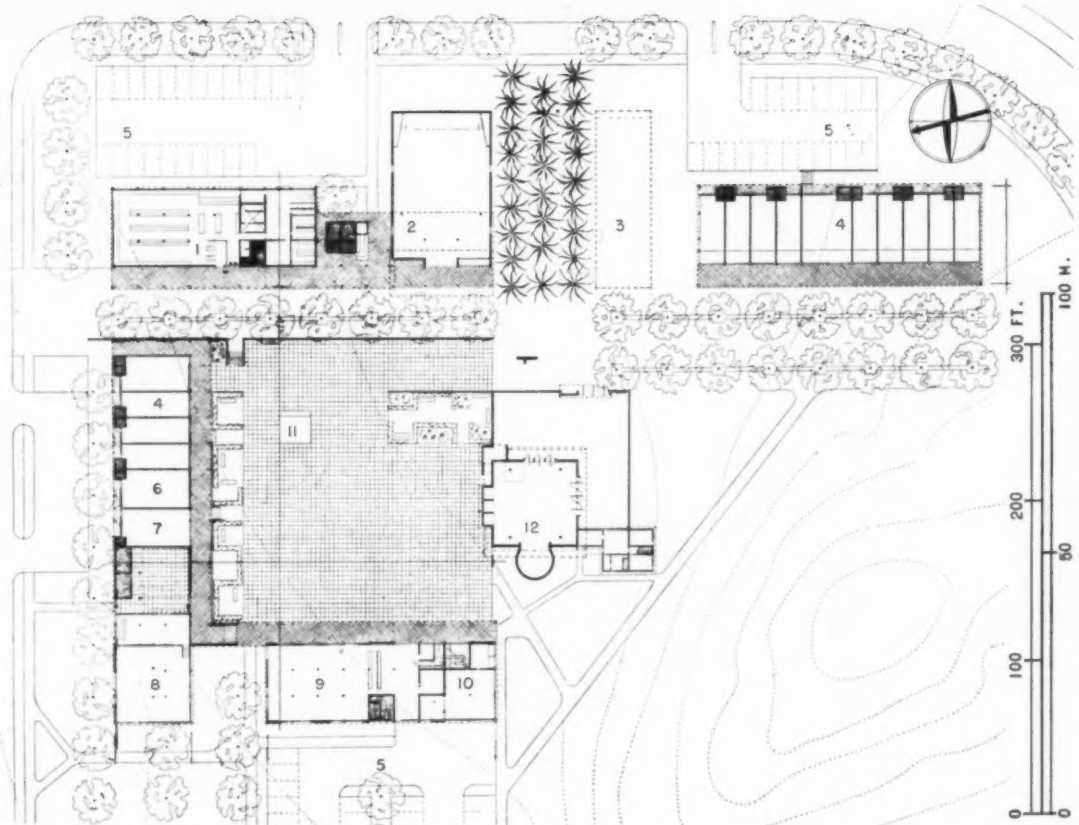
Venezuela

Paul Lester Wiener and  
Jose Luis Sert, Architects  
in collaboration with Oficina de  
Planificacion y Vivienda, Caracas



## THE CIVIC CENTER FOR CIUDAD PIAR

- 1 Commissary
- 2 Cinema
- 3 Future Municipal Building
- 4 Shops
- 5 Parking
- 6 Post Office
- 7 Bank
- 8 Club
- 9 Cafeteria
- 10 Fire House
- 11 Bandstand
- 12 Church

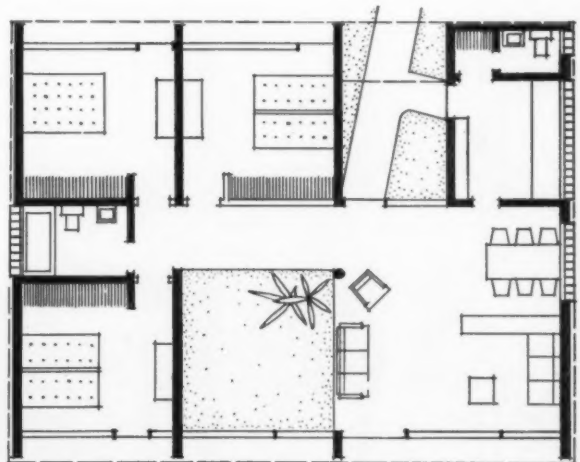


Located near the Orinoco River in Venezuela, Cerro Bolivar, a low mountain containing an estimated one half billion tons of iron ore, was discovered six years ago by U. S. Steel Corp. engineers. Today, at the foot of the mountain, a new mining town called Ciudad Piar is under construction, as is a port city called Puerto Ordaz, 90 miles away. By 1955 the high grade ore will be feeding the Fairless Works in Pennsylvania.

Each community will have its civic centers, serving both the local and foreign populations. This is one of the

first cases in which an American company, in initiating the building of new towns abroad, has called for an integrated town plan. This is in contrast to the more customary "company town" concept. The civic centers will be the hearts for the towns, and should stimulate social relations between local and foreign residents.

The Orinoco Mining Company (U. S. Steel subsidiary) and the Venezuelan Government are joining hands to provide housing, social services and utilities for the entire population of both cities.



Left page shows plan of the port city, Puerto Ordaz. Above and left are preliminaries for junior workers' house



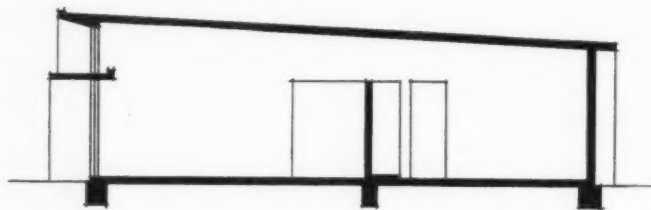
CIUDAD PIAR  
and  
PUERTO ORDAZ

Venezuela



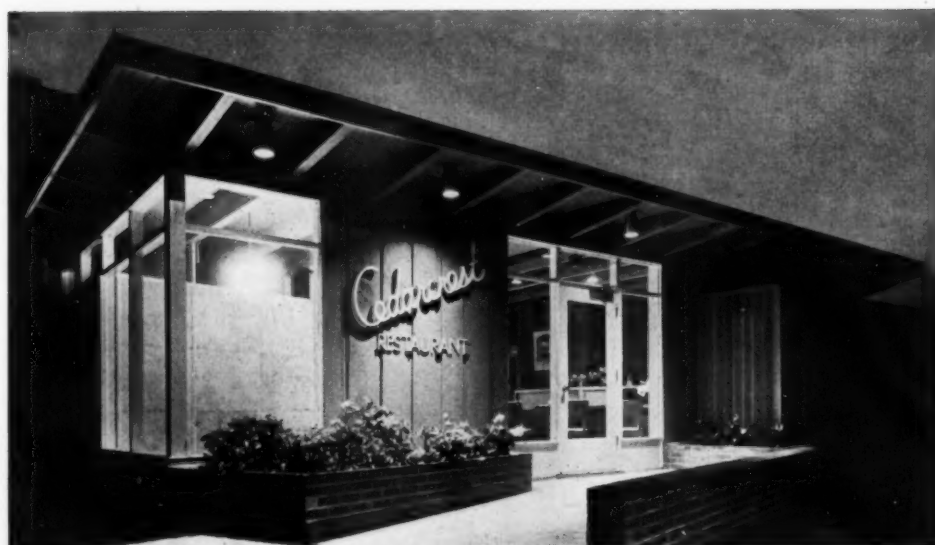
*Only a few of the many types of houses can be shown in a brief coverage, but there will be in addition low cost houses for other categories of workers, as well as clubs, schools, etc.*

*On this page are shown preliminary studies for the senior workers' house; note the importance given to cross ventilation through open patios, louver panels, louvered doors, and screens. Houses will be built of concrete block with concrete slab floor and roof. Finished floors will be linoleum for interiors and ceramic tile for patios*

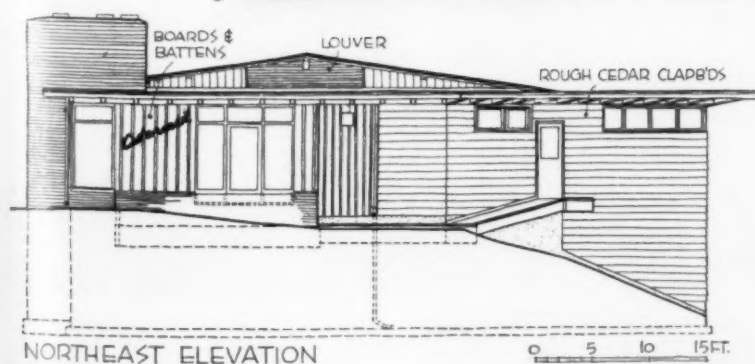


# GOLF CLUB RESTAURANT BRAVES SUN FOR VIEW

*Cedarcrest Restaurant, Marysville, Washington*



Charles R. Pearson



*Harold W. Hall, Architect*

*Arthur A. Graves  
David W. Dykeman, Jr.  
Associate Architects*

## GOLF CLUB RESTAURANT



THIS RESTAURANT BUILDING is situated close to the club house of the Cedarcrest (municipal) Golf Club. It was planned not only as a public restaurant, but also as headquarters for group "field days."

Two major problems complicated the planning. One was a limited budget. The other was the unfortunate location of the best view at the southwest end of the site. Despite the fact that the budget would not permit air conditioning, the entire southwest side was, after much discussion, thrown open to the view, with floor-to-ceiling drapes providing the only sun control except for a shallow roof overhang. The owners and architects hope eventually to install mechanical ventilation in the dining and club rooms.

Construction is wood frame on concrete foundation. Only common lumber was used except for trim, which is kiln dried finish material. Exterior walls are rough cedar siding, painted. Club room ceiling is cement bound wood fiber board which acts as a two-way sound barrier between the club and dining rooms.







UPPER FLOOR

Budget limitations forced compromises such as use of fir planking for dining room floor; owners hope to lay either cork or carpet in near future to help cut down noise transfer from this area to club room below. Building, complete with fixture work, cost \$32,000, or slightly over \$8 a square foot



Charles R. Pearson

COMPACTNESS was the first requirement for this Los Angeles house: the owners, a couple with no children, had lived for a number of years in a residential hotel, with no household responsibilities whatever, and were understandably anxious to keep maintenance problems to a minimum. The most notable feature of the plan, however, is not the compactness but the deep-in-the-country privacy achieved on a city lot.

The house is on a low hill with a distant view of the ocean and the city. The site, irregular in shape and not too large, slopes steeply downward toward the view; existing eucalyptus and fir trees — most of which were saved — provided natural landscaping, and were used to frame the house. Well distributed



planting space outside the terrace windows and along the brick motor court wall takes the place of a garden.

At the owner's request the house is two stories in height, with living rooms and maid's quarters on the ground floor and the two master bedrooms upstairs. Both living and dining rooms open to a curved terrace protected from the winds by the high brick wall and the house itself, but freely overlooking the view to the south. The master bedrooms, each with its own dressing room and bath, share an 8-ft-wide balcony, partly screened for fly-less sunbathing.

The structural frame of the house is based on a 6 ft-4 in. module with steel posts and wood beams. Exterior walls are stucco and redwood siding.

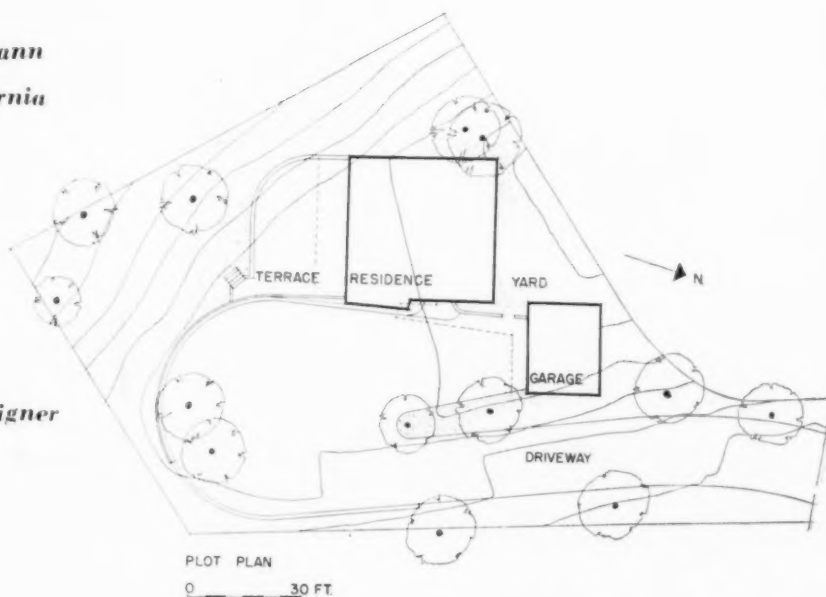


Semicircular brick wall of motor court is integrated into design of house, gives complete privacy to all living areas and shields terrace from wind. Doors in wall (opposite page) lead to terrace at one end, yard at other. Exterior of house is colorful: salmon brick wall, redwood siding, aluminum window frames, brilliant coral wood panels between first and second story hall windows. Aluminum sheet canopy connects house with garage.

## CITY RESIDENCE BOASTS COUNTRY PRIVACY

*House for Mr. and Mrs. Gustav Dann  
Hollywood Hills, Los Angeles, California*

*J. R. Davidson, Designer*



Julius Shulman



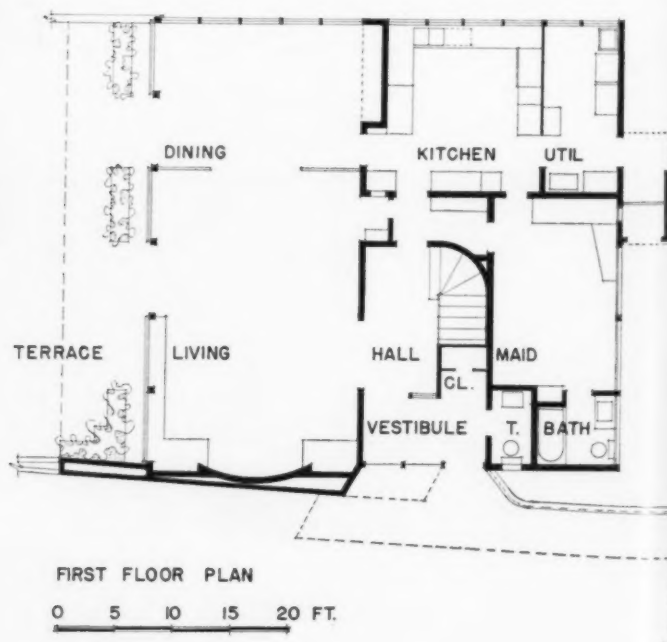
Steepness of site at south and east necessitated retaining wall for the filled-in terrace of living and dining rooms. From just a few feet below the house only the second floor is visible. Screen on bedroom balcony is plastic, on steel frame. Window frames are lemon yellow.



# CITY RESIDENCE — COUNTRY PRIVACY



Left: main entrance is from motor court, door is wood, painted eggplant to contrast with salmon of brick wall; lower windows are ribbed glass, entrance paving is Arizona flagstone. Above: view of terrace through door to motor court; bedroom balcony has high railing of cypress siding for privacy





SECOND FLOOR PLAN

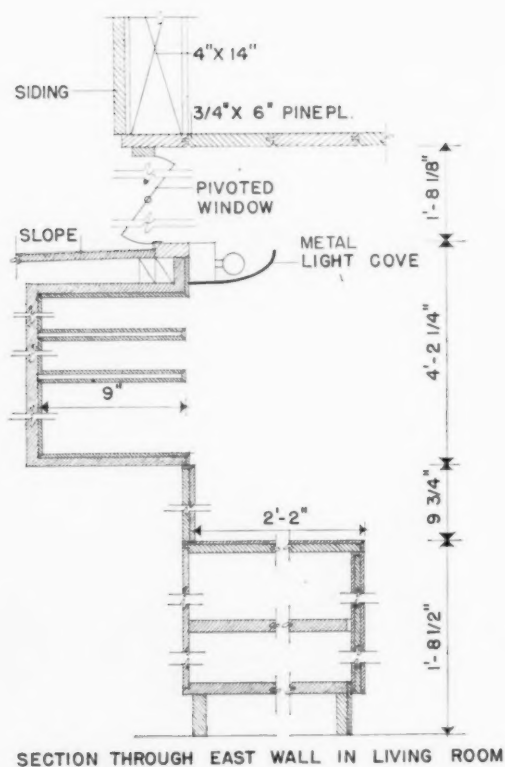
Julius Shulman



*Terrace overlooks the city — but distantly, over the trees.  
Paving is cement with exposed aggregates and brick liners*

## ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment



SECTION THROUGH EAST WALL IN LIVING ROOM



### CITY RESIDENCE — COUNTRY PRIVACY

Above and below: living room looking toward terrace. Ceiling is pine T & G; east wall and low cabinet under window are natural elm, waxed. Floor is cork, rug is light cocoa colored loop. All lights are recessed, and a light cove runs the length of the east wall above the book shelves and cabinets (section at left above)







Two sliding screens of woven wood close off dining room when desired. Dining room floor and ceiling are same materials as in living room. Buffet wall is paneled in elm, waxed; lights are built into buffet ceiling. House is heated by radiant panel, in floor on lower level, in ceiling on upper

Julius Shulman





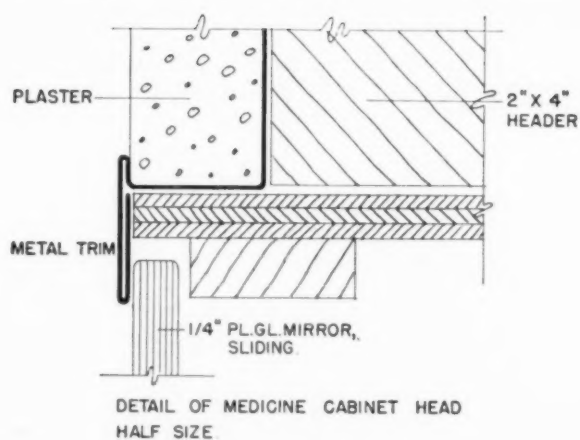
## CITY RESIDENCE — COUNTRY PRIVACY

Left: vestibule floor is Arizona flagstone, ceiling is coral-painted plywood, wall is light gray. Small wood mesh screen separates vestibule from hall. Below: second floor hall uses low storage cabinets with planting box at one end as railing above stairs. Carpet here and on stairs is cocoa, wall at left is painted to match. Two-story hall windows are clear glass; draw curtains are bamboo weave

## ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment





Bath between two master bedrooms is key to second-floor versatility; owners can spread out over entire floor or assign a completely separate suite to guests. Medicine cabinet (detail, below left) is flush with wall, has sliding mirror door. Glass jalousies at windows; asphalt tile floor, light yellow walls, gray lavatory top. Each of three baths (including maid's on ground floor) has electric wall heater



Storage space, excellent throughout the house, is particularly good on second floor. Each bedroom has two large clothes closets, and the master bedroom (left) has in addition a much larger closet off the dressing alcove plus built-in storage drawers and shelves. Upstairs hall also has linen closet and large shelf-lined storage room

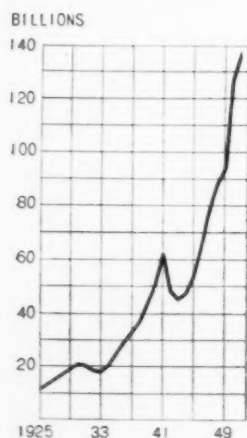


MORE AND MORE ARCHITECTS are being called upon to design industrial buildings. The amazing growth of America's industrial plant in the last few years seems to know no stopping point. Presumably the government-sponsored defense plants are largely built, and that particular push is over. Yet industrial buildings continue to pop up, as expansion begets further expansion, in a sort of cosmic progression.

It is the smaller offspring that become the subject of this Building Types Study. The study focuses especially on small industrial buildings having some relation to truck transportation — factories, warehouses, truck terminals, buildings usually found in smaller cities. These types of buildings, though widely different in some respects, have a common interest in the booming growth of over-the-road transportation, indeed the trailer truck has now become a major factor in building design.

The chart at the left shows how rapidly truck transportation is developing. The American Trucking Associations report: "The American trucking industry is one of the most dynamic forces in our national economy. It has grown from fewer than 400,000 trucks in 1917 to more than 9,000,000 trucks and 500,000 freight trailers today (1951 figures). It gives employment to over 6,000,000 persons with an aggregate payroll of over \$20,000,000,000 per year and fur-

INTER-CITY TON-MILES  
ALL TYPES OF TRUCKS



## ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 201

### INDUSTRIAL BUILDINGS

#### Industrial Buildings Types Studies in Architectural Record

June 1938  
June 1939  
February 1940  
January 1941  
January 1942  
June 1942  
December 1942  
October 1943  
November 1945  
December 1946  
August 1947  
August 1948  
November 1949  
February 1951  
July 1951  
February 1952  
Motor Transport Terminals  
October 1941  
Lighting of Industrial Plants  
September 1942  
Power Plants  
May 1944  
Industrial Research  
Buildings  
July 1950

nishes indirect employment to many others. Last year it spent over \$3,000,000,000 for new equipment alone and much more in operating expenses for fuel, tires, terminal buildings and supplies."

To architects the significance of all this lies in the great number of small buildings, in small cities, involved in this type of expansion. Factories, as everybody knows, are moving to the suburbs, in fact to the country, freed by trucks and automobiles from their former dependence on big-city transportation systems. Sales and service buildings and warehouses, again dependent on trucking, are opening up new markets in outlying territories. And the trucking industry needs its own buildings. The past two or three years have seen great numbers of strictly terminal buildings, as distinguished from warehouses, spring up at highway centers. The truck terminal has lately become the subject of intensive study (see page 156), for materials handling, even from one truck to another, is recognized as a costly operation.

For architects this is almost a virgin field, involving a range of small buildings with widely different design criteria, but all in their own way paying homage to the monster of the highway.

## NEWER TRENDS IN INDUSTRIAL BUILDINGS

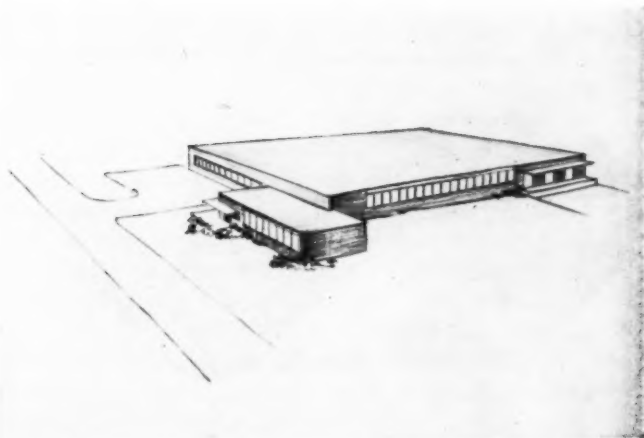
*By Frank L. Whitney*

*Chief Engineer, Walter Kidde Constructors, Inc.*

**I**N THE YEARS SINCE THE WAR there has been an amazing activity in the construction of smaller industrial buildings. In this rapid expansion there has been a definite trend toward decentralization. These two factors, each with many ramifications, have not only spread the work of the design professions, but also produced many changes in programming and design, also in construction techniques.

There is a third factor, which is perhaps more important than either of those first two in the changing concepts and uses of industrial buildings. That is the development of a highly organized system of truck transportation. It makes no particular difference that reliable trucking has been built up to accommodate changes in our distribution system; the solid fact is that over-the-road transportation has made possible a wide dispersion of American industry and a far-flung complex of factories, warehouses, sales and service buildings and truck terminals. Transportation factors have always determined the location and design of industrial buildings, and as transportation changes, so do the buildings. It is the purpose of this article to examine quickly some of the more important aspects of the changing industrial scene, and to trace some of the effects in the design of industrial buildings.

The dispersal of industry is a central if obvious fact. Though this has been a stated objective of government, as a safety measure in case of bombing attack, the other reasons for moving to the country are quite compelling. They are of course familiar, and need only brief mention here. Congestion is both expensive and unpleasant, two very cogent arguments for dispersal. Today parking space for employees' cars is likely to be more important than mass transportation for workers. City taxes drive industry outward. So do labor considerations. So do land costs. Given good roads, automobiles for workers, trucks



*Small buildings, in small cities — many warehouses*

for materials and finished products, dispersal is almost automatic.

More important perhaps than these common inducements is the distribution system. Markets today are not confined to city concentrations; markets are everywhere. As the once-undeveloped areas — the South, for example, or the West — become increasingly important market places, industry moves out to serve them. And there follows an ever-growing complex of small factories, distribution centers, warehousing and service facilities, garages, truck terminals. If in all of this development the old-time wholesaler has all but disappeared, the complicated distribution system that replaced him still needs buildings — more buildings rather than less, and buildings of more different types and designs.

### CHANGES IN THE FACTORY

The planners of factory building have gained important freedoms in this dispersal movement, just as the industrialist has. It is axiomatic that the factory building is designed around the production line. With a large plot available, the designer is free to accommodate the assembly line in any desired alignment, disposing his

areas as he sees fit. He can place storage areas, power plant, employee facilities, truck docks as the process demands. And he can arrange for expansion or for future changes without restrictions because of limited land area.

These are the more obvious freedoms; there are some new ones, however, which may not be so apparent. Take the matter of storage. In each type of plant there are individual problems of storing raw materials on the one hand and finished goods on the other hand. These are problems that need constant re-examination. It may be found, for example, that coordination of delivery arrangements may cut down or virtually eliminate the areas commonly reserved for storage. It may be much more efficient to take finished products off the line and directly into carriers and out of the plant. There are in fact manufacturing plants that would have to shut down if the outgoing transportation should be tied up for even a few days; they have simply eliminated storage of finished goods. Such an arrangement might be entirely feasible for one factory, but completely impossible in another. Or, the distribution system and the particular location may introduce delivery factors that might reverse the design criteria for materials and product handling. It is not news, of course, that materials handling problems are major design considerations; the point here is that modern distribution systems, completely outside the plant, introduce new complications within the plant, and that these may vary widely in different locations.

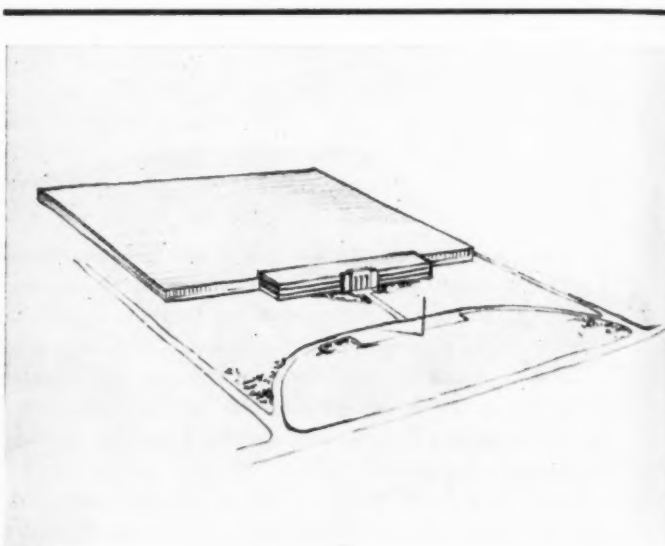
In architectural design the new freedoms are increasingly in evidence. The architectural concept of the industrial plant has in the past decade been radically revised. Industry readily accepted the principles of contemporary architectural design in its early stages, and with few exceptions these principles were put into full use in the suburban development. This because there was no required architectural tie-in with existing designs as had been the case in the expansion of most existing urban plants. Also, and more importantly, the economies of contemporary design were probably its greatest impetus. The industrialist found that he could have an attractive-looking plant in the contemporary style at no additional cost and in many cases, under an intelligent direction, actually at reduced cost. There were, of course, the few exceptions in industry where traditional pattern was desired, in which the industrialist was willing to accept the added cost. It is interesting to note that in most of these cases actual inefficiency of operations developed and the ability to design the logically expanding plant was considerably limited.

Another strong design influence is the federal tax structure. With few exceptions it seems to be the manufacturer's desire to develop the lowest capital expenditure, and while this is not exactly news, there may be a curious reversal due to tax factors. Without tax considerations the designer would try to work out a building which would give his client the best economy over the years, balancing first cost against annual operating costs; he might spend a bit more initially to save main-

tenance expense. But with high annual corporate taxes on profits there is less reason to invest more heavily at first, since the maintenance expense becomes an allowable item of cost.

This consideration could reverse again if the plant were for defense production, its cost written off in five years as permitted by the government as an inducement to undertake construction.

One word of warning here. This principle of balancing tax factors does not imply any general carelessness about manufacturing costs. The point is that manufacturing costs are not the same as building maintenance costs.



*"The architectural concept of the*

and the latter are presumably small by comparison. Low manufacturing costs might indeed be the principal reason for construction of the plant. It is nevertheless true that, once the building is properly planned for low-cost manufacturing, costs of operating and maintaining the building itself are not overpowering considerations.

Perhaps a more positive way of saying it is that the cost of the building is weighed primarily in relation to manufacturing costs, and this relationship is quite variable. In an earlier day a factory building was supposed to last fifty years, and was dignified with a sort of institutional quality. Too frequently the old pile did last that long, and the industry suffered accordingly. Today we think of a factory building as merely a housing facility for a certain layout of machines and the necessary personnel facilities. And the industry is prepared to enlarge it, change it, sell it, or abandon it entirely, whenever it begins to hamstring the operations. We expect a certain fluidity in manufacturing operations, and we design for it as we can.



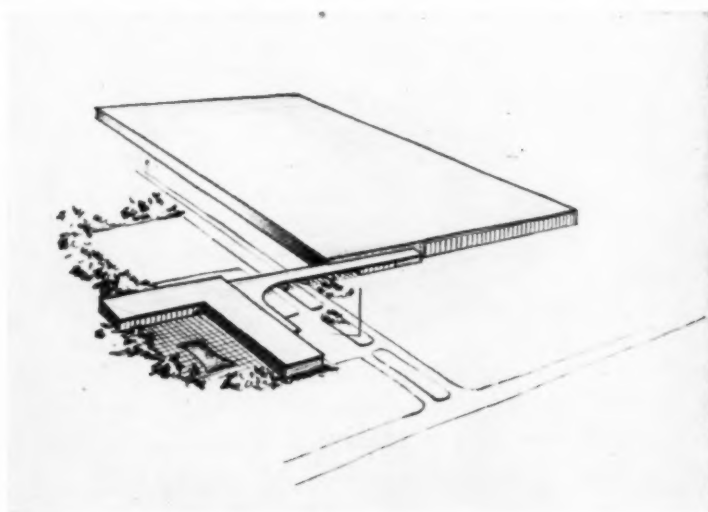
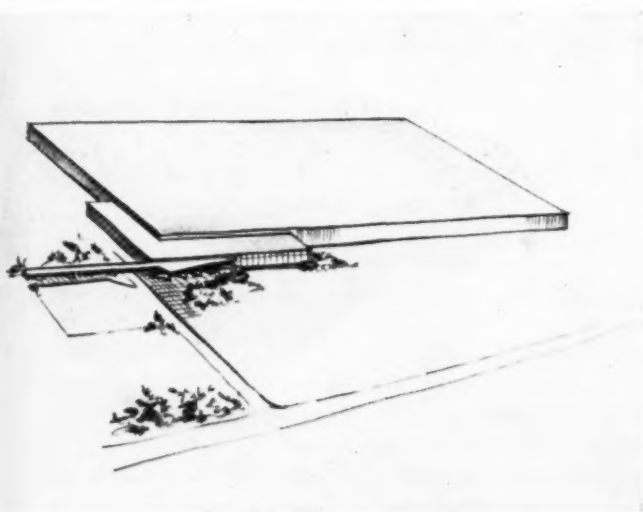
In planning a building, then, the designer leads his client away from institutional monumentality, in favor of flexibility, expandability, perhaps even demountability.

### THE FACTORY WALL

Here, then, the logical building approach is a wall which can be economically expanded or revised as the production facility is expanded or revised. Here we find masonry at a disadvantage, basically because of its inflexibility. However, in many cases the manufacturer, it seems, is desirous of masonry from the standpoint of

with the known building materials. For example, in a chlorine atmosphere these plastic panels are about the only thing we have that will stand up over a period of years without considerable maintenance. The use of plastic panels will open new vistas for the architectural designer and will have a tendency to change or modify our thinking in industrial lighting.

There are, of course, areas in the industrial building where at present the owner is justified in his desire for masonry. In food plants the smooth interior finish of the glazed tile wall is about the most economical construction where sanitation is not only desired but required.



*industrial plant has in the past decade been radically revised."*

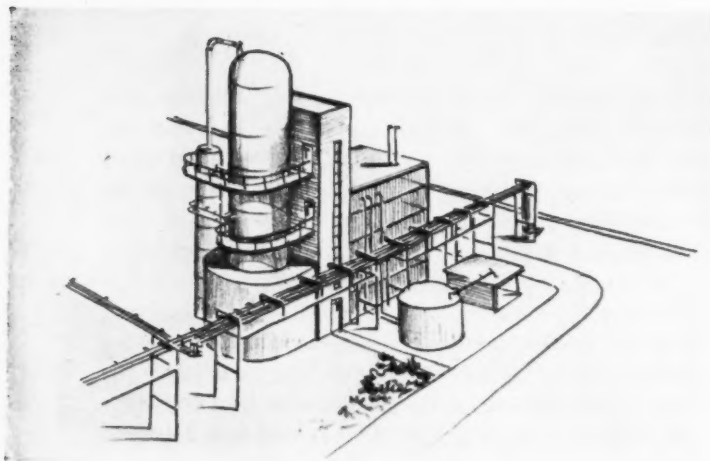
appearance. This because brick is a building material he is used to, together with the fact that most of the panels on the market today were originally developed as a cheap substitute building material. The effort to utilize them architecturally has been a relatively recent experiment and is taking hold with difficulty. Although the use of panels has been taking hold with some difficulty, it is easy to predict its acceptance; one reason being the increasing shortage of masons, the other being the development of newer and better panels which will demonstrate lower maintenance cost and furnish the desired flexibility and resultant economy.

A new interest in the building market is the plastic panel. In most cases this is a corrugated panel of fiber glass mat impregnated with a resin. At the present time it is at a disadvantage since it is not fireproof. However, it is only a matter of time before this feature will be corrected. It has been in various laboratories already. It should have a great future. In some cases it will be the answer to problems which we have been unable to solve

At any rate, it would seem to be healthful to think of the industrial plant more as a shell over a mechanical process than as the ancestral home of a corporation, and try to design for fast-changing times.

One must go further along this line and inquire as to whether the factory building is a separate entity or part of the machine process. As the trend toward most "automation" continues, automatic controls are continually replacing human machine operators, until eventually it might develop that the buildings need scarcely be designed for human comforts but for machine covers. We should not be too long in recognizing that the instrument does not need the same housing facility. The instrument can also get to various levels with relative ease and without stairs. Consequently the electronic devices and relays may bring back verticality, reversing the horizontal trend.

There may come a time when the factory designer will face a difficult decision — whether to house the machine or the man. Although he might recognize that



*“ . . . a shell over a mechanical process . . . ”*

the operator is no longer at the machine, but is rather a technical man moving about merely servicing automatic machinery, he will still face resistance, for the maintenance man will expect the same kind of air conditioned building to work in that the machine operator always had. Perhaps there would be weather conditions occasionally which would make his maintenance work difficult, but the coincidence of bad weather and breakdown would surely be infrequent, so infrequent as to make it economically unsound to design a conventional building cover merely for machine maintenance. Lest you think that this begins to sound like merely a mechanized nightmare, the author had these problems in a large refining plant which did leave many of the machines in the open.

#### WAREHOUSES AND TRUCK TERMINALS

In the design of a warehousing facility or a truck terminal the architectural approach is almost completely the economical building, for the developed cost of the structure itself is a large part of the total operating cost of a warehouse. In a manufacturing facility building cost might run only a third of the equipment cost and in some process facilities even less than that. Consequently, the importance of structure varies with use. In the highly competitive warehousing field the ingenuity of the architect is taxed greatly because of the highly competitive nature of business and because of the

importance that the cost of the structure will play in the operation.

One of the most typical solutions of a warehousing problem is the masonry bearing wall with the light open-web long-span joist roof. The masonry bearing wall is particularly suited to warehousing; inasmuch as it is a working wall it will demonstrate certain economies. Its one big disadvantage is its inflexibility for future expansion. This, of course, is not of major importance in the warehousing and terminal field inasmuch as new facilities can be separate units without much difficulty of operation.

Further studies of the warehousing structure have been centered around the column spacing. It is the natural desire of almost every warehouse operator to have as much clear and unlimited space as possible. However, again the economics of structure enter this picture. When one attempts to develop a span somewhere beyond 40 feet in length, economy dictates that he go to a truss type member and although the steel in pounds per square foot of building is less on a truss building, the cost per pound is relatively high, due to the greater fabrication cost. Consequently, a great deal of study has been devoted to economic spans for this type of building.

There are several factors to be considered: economic sprinkler head spacing and spans which would accommodate the maximum palletized storage. One bay spacing which has been developed and seems to be admirably suited for most warehouse layouts approximates the 24 by 33 foot bay. This seems to approach the maximum in sprinkler head coverage. It facilitates the use of relatively economically wide flange sections which can either be cantilevered over the columns or more simply connected. Although the pound per square foot of steel is somewhat higher than in some of the other schemes, the fabricated and erected cost due to the simplicity of design brings it within the economic range.

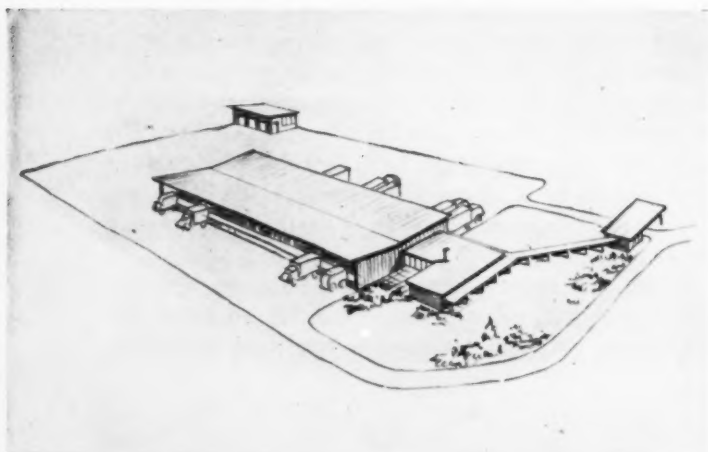
One more general remark on warehouses and truck terminals: they really should not be lumped together so blithely, and they appear in several different uses and types. In a sense a warehouse is the opposite of a truck terminal: the warehouse stores the goods; the truck terminal is designed to speed a handling process with an absolute minimum of storing.

Warehouses might be as widely different as the products they store — furniture vs. frozen foods, fish vs. vitamin pills. And naturally their design problems are widely different.

Truck terminals are tending to be much alike, if they are intended, that is, for commercial or contract truck lines. But the bulk of the truck fleets are owned by private corporations — Coca Cola trucks, for example — so terminals for them vary again as widely as the operation involved.

Sufficient to say here that they are getting to be big business, in every highway crossroads. And they are worthy of real study by the designer, being types of buildings where functional aspects assume great importance in a highly competitive field.

*Truck terminal, a new building type*



# SMALL FACTORY FOR A MOTORIZED AGE

*New Plant for Atlanta Envelope Company, Atlanta, Ga.*

*Moscowitz, Willner & Millkey, Architects*

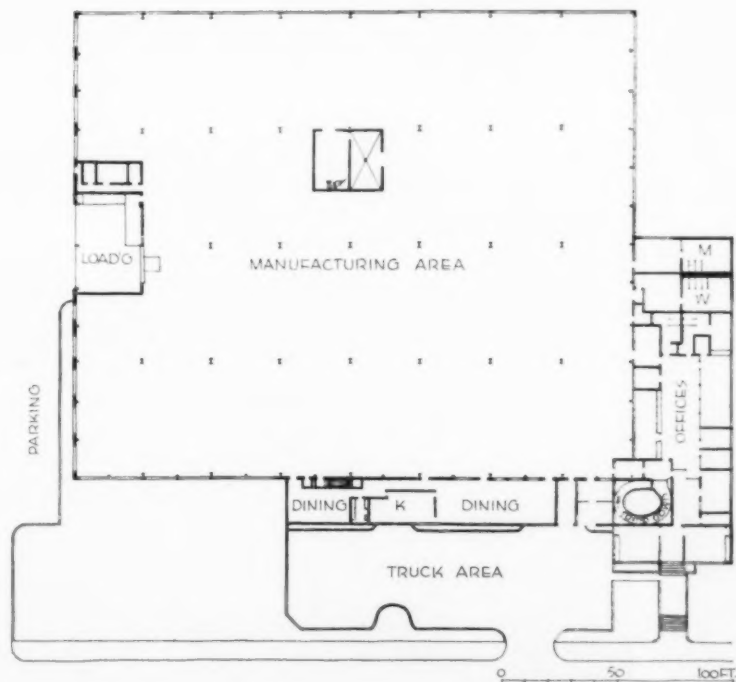
**T**YPICAL of the small factory in a motorized age, this building pays its respects to the truck and the automobile. Its site was chosen on the main north and south highway through Atlanta, for easy access for truck deliveries, also to develop the advertising value of display to hordes of passing tourists. In addition, the site adjoins the clover leaf of a new expressway, permitting



Joseph Molitor

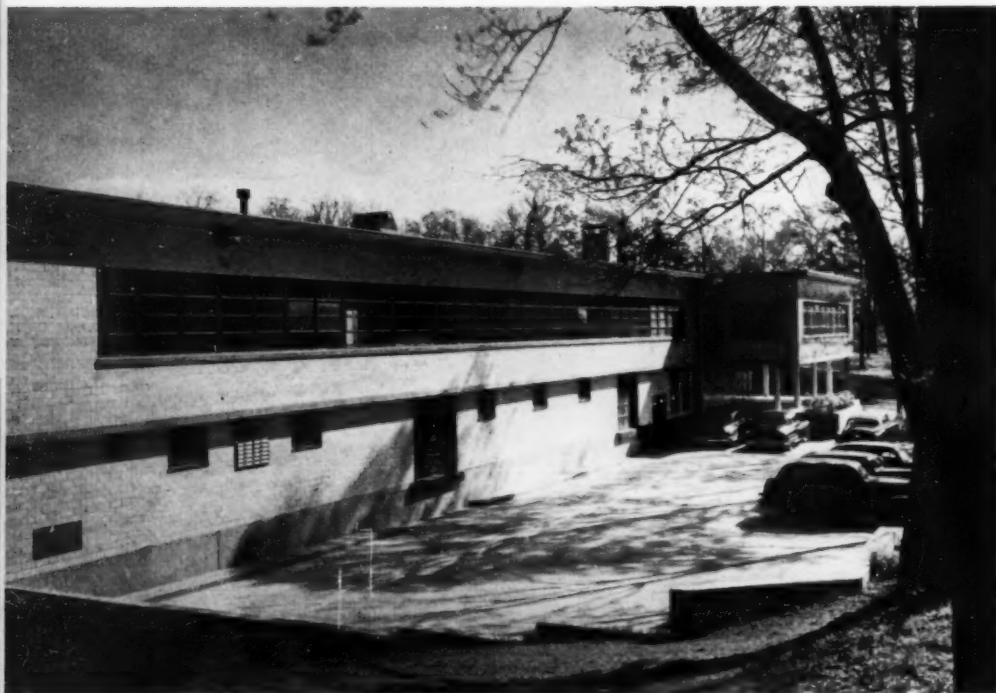
attractive landscaping and insuring an open area around the building. Although the plant is essentially a one-story scheme, advantage was taken of a slope to provide a lower floor for boiler room and scrap baling room. Separate chutes from machines above provide a very economical means of removing scrap paper, also of keeping it sorted by types. The two-level operation provides for deliveries at either level, to minimize handling costs. Parking areas are provided both at the rear on the main floor level and at the entrance at the lower level. Access for all personnel and the public is from the main entrance, from which an oval, cantilevered concrete ramp spirals up to the reception room on the main floor. This low-rise ramp was used instead of a stair and elevator which would otherwise have been necessary.

The building was designed around a circular flow chart for mass production of envelopes. Cantilever steel construction gave a 30- by 50-ft column spacing with a minimum of steel. The structural system uses the concrete floor as a structural element to stiffen exterior columns. Exterior walls are placed outside the exterior columns.





## FACTORIES



*All manufacturing is done at upper level; scrap paper is chuted down from individual machines, baled at lower level and taken away immediately by truck. Spiral ramp is public and personnel entrance to plant and offices from lower level; ramp takes the place of stairs and an elevator that would otherwise have been necessary. Office areas are air conditioned, air being exhausted from offices to cafeteria, which, being used only an hour and a half a day, does not then require its own cooling system*



Joseph Mollitor



*Plant walls are buff structural tile exposed on the inside; in offices and toilets walls are light green structural glazed tile. Plant floors are concrete with a three-quarter-in. pea gravel hard topping; floors in office areas are asphalt and plastic tile*





## FACTORY DESIGNED AROUND MATERIALS HANDLING

*New Plant for The Mennen Company, Morristown, N. J.*

*A. M. Kinney, Inc., Engineers and Architects*

**M**ATERIALS HANDLING efficiency was the central objective in the planning of this new factory; it did not actually take precedence over the manufacturing operation — for the plant introduces many innovations in producing its line of goods — but materials handling did affect the design of the building more than the manufacturing process. The packaging room became the heart of the layout, just as the final assembly line dominates in an automobile factory. Manufacturing is done on the second floor, since most of the ingredients are handled in piping systems. Virtually the whole first floor is warehouse and storage space, the packaging department at one end, the truck docks and railroad siding at the other. As a matter of fact, the huge warehouse area was the principal reason for the building of this new plant, materials and finished product storage having been literally crowded out of the old plant.

The spacious packing room is arranged across a portion of the north end of the warehouse. The exterior

wall, having north light, is constructed entirely of glass block. The entire ceiling is louvered construction with fluorescent lighting above. After considerable study, the packaging lines were disposed in a U pattern, as this scheme greatly shortened trucking distances for packaging materials and finished cartons. The product itself is delivered to the lines by gravity flow from second floor. Thus there is virtually no trucking into the packaging room and it was possible to make it attractive with asphalt tile flooring in color patterns.

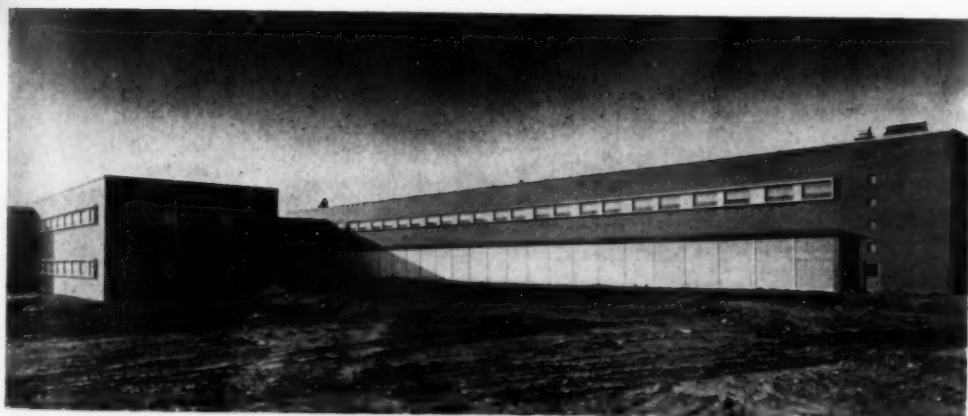
Bay sizes in the warehouse were selected to accommodate two sizes of pallets, 4 by 4 and 3 by 4 ft. Main aisles are 13 ft wide, cross aisles 10 ft, allowing ample maneuvering and passing space for fork lift trucks.

Materials handling equipment in the order make-up section was given considerable study, resulting in the rejection of some of the more complicated systems in favor of simple live roller belt conveyors, these continuing on outward to waiting freight cars or trucks.





Administration building with its reception room (above) and offices is virtually a separate building at the front, will be given extensive landscaping



Packaging room (below), the "heart of the operation," has glass block wall at north side (photo above), louvered ceiling with fluorescent lighting above



John Albert



## FACTORIES

*Only a few raw materials must be transported by truck to second floor manufacturing areas; for this a huge elevator can lift two trucks at once. Other materials can be piped up; finished products go to first floor packaging room by gravity flow. Making up outgoing orders is a highly systematized operation, but is handled on simple live-roller belt conveyors, which go on out to freight cars or trucks to simplify loading*





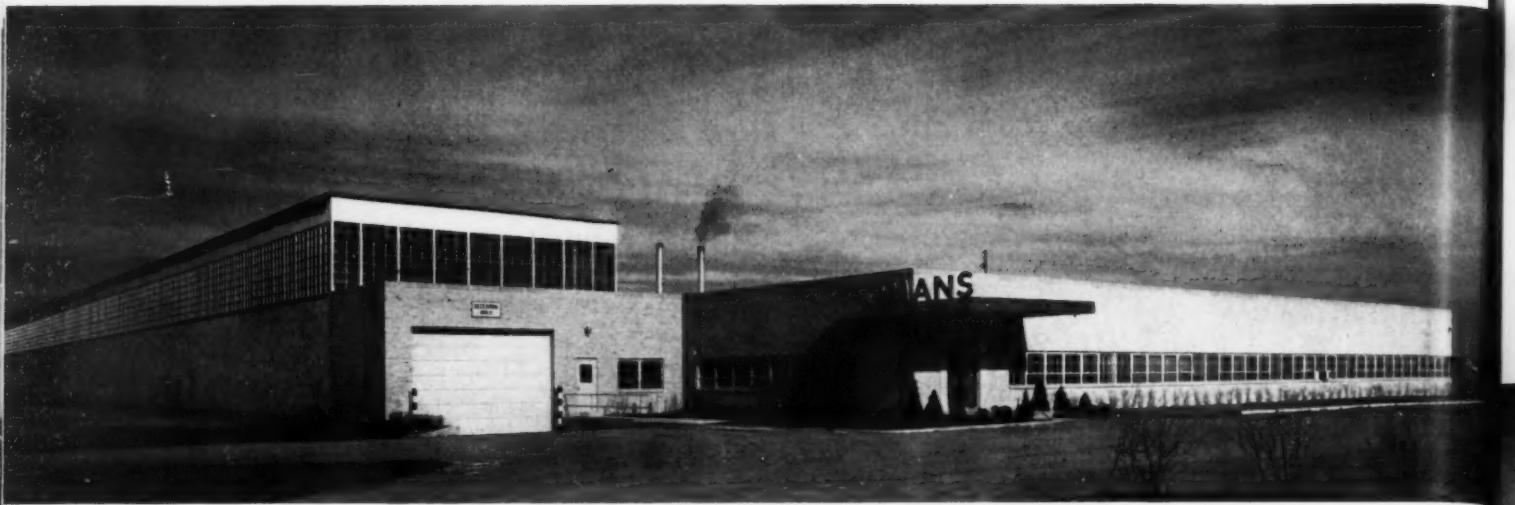
*Finished goods are stored in huge warehouse, with carefully arranged categories and aisles for palletized handling by fork lift trucks; thence they go through order make-up room by conveyors right into trucks*



John Albert



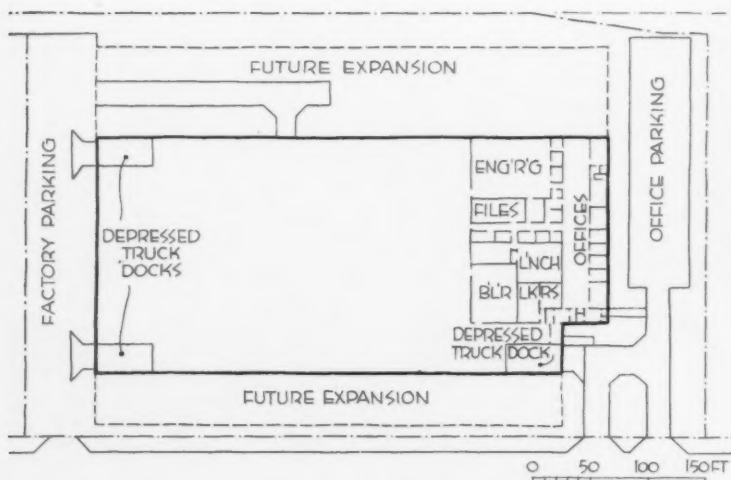


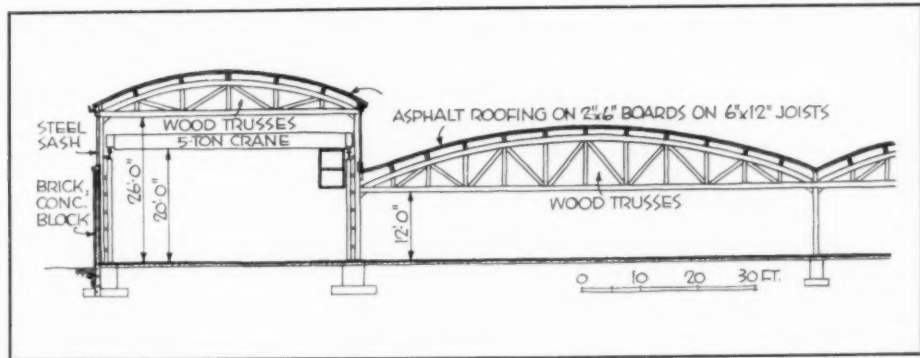


## TYPICAL NEW FACTORY BUILDING AT CLEARING

THIS IS ONE OF SEVERAL new small plants in the Clearing Industrial District, Chicago, an industrial subdivision built around good rail and truck transportation, with scores of small factory buildings all generally economical, clean and functionally designed. This one has wide column spacing — 80 ft — except in the one high bay for crane operation, where the span is 44 ft, with clear ceiling height of 26 ft. The building is planned for expansion in two directions: an additional crane bay to the west, one additional 80-ft bay to reach a future track to the east. Wood trusses were used because this building was constructed at a time when steel was in short supply. The building depends now on trucking for its transportation needs, but a rail siding can be brought in at any time it is required.

*Assembly Building for Yeoman Brothers Company  
Clearing Industrial District, Chicago  
John S. Cromelin, Architect*





Hedrich-Blessing



## FACTORIES



*For Motor Truck Division,  
International Harvester Company  
Fort Wayne, Indiana*

*Albert Kahn Associated Architects and Engineers*

## ENGINEERING AND

**B**UILT for its motor truck division, the International Harvester Company's new \$6,000,000 motor truck engineering and laboratory building is devoted exclusively to research, design, test and development of motor trucks.

The new facility comprises approximately 300,000 sq ft of floor space, on a site of 25 acres. Of brick and steel construction, the building is one-story in height, has three wings and is E-shaped with the segments of the "E" housing the various development areas, including executive offices and drafting operations, road test and experimental shops, engine test cells, transmission and rear axle test cells, and laboratories.

Site preparation for the building included placing approximately 130,000 cu yd of silty blue clay fill from 4 to 8 ft deep. The fill was placed in layers and compacted with sheepfoot rollers to required 95 per cent density of the Proctor test as modified by the C.A.A. specification. Tests were made of moisture content and compaction, and each layer was placed and compacted at as near optimum moisture content as could be practically obtained in the field. A constant slope was maintained over the entire site during operations to facilitate drainage. Load tests were made which showed that the





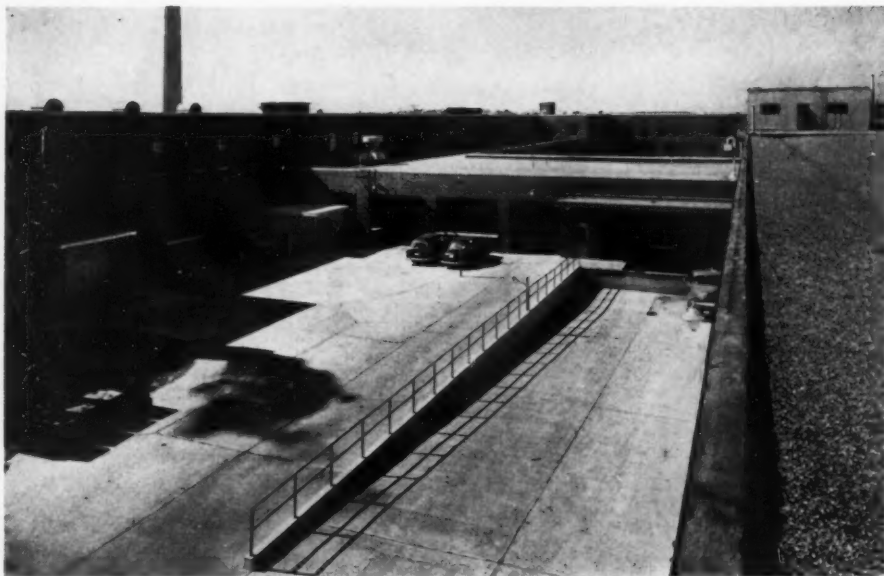
## LABORATORY BUILDING FOR TRUCKS



*Courts between the wings of the E-shaped building prove useful for access to various sections and parking space for the trucks under study, also for exterior display purposes. Entire building was placed on fill of silty blue clay compacted by sheepfoot rollers*



Hedrich-Blessing



## FACTORIES

Above: one of the courts of E-shaped building, toward dynamometer wing.  
Below: view of south court, test area at left, experimental shops at right



Hedrich-Blessing

Right: guard room and employees' entrance

fill could be safely loaded with 4000 lb per sq ft, with a settlement of not over  $\frac{1}{8}$  in. Accordingly footings were placed in the fill instead of excavating to the natural ground below, with a considerable saving in excavation and concrete work.

Of structural steel frame with truss or beam roof construction, the building has poured gypsum roof slab, with 1 in. of form board insulation covered with composition roofing. Major portion of the exterior walls are of blended red face brick backed up with cement block. Wall surfaces above sash at the road test and experi-





*Drafting room is 420 ft long, 100 ft wide. Overhead lighting, giving 70 foot-candles, was carefully designed to prevent excessive brightness when the eye looks lengthwise of room*



mental shop wing, also fan rooms serving these areas, are gunite on steel frame. Sills and copings are of stone.

Aluminum projected sash was used throughout the executive and engineering wings, with steel projected sash in the balance of the building. Stainless steel was used at the main entrance, lobby windows and at fascia of canopy along the west elevation.

Suspended ceilings of mineral acoustic tile or sound absorbing blanket with perforated transite or metal pan acoustic tile were used throughout the building except in the road test and experimental shop areas

where roof trusses were exposed. Floors are concrete slab on ground with surface treatment varying with occupancy requirements of the several departments. Creosoted wood block is used in the experimental shops, and separate cement finish of high density and high compressive strength in the road test area.

The drafting room in the engineering wing parallels the north wall which makes possible full use of desirable north light. This room has an unobstructed area 100 ft wide by 420 ft long and 12 ft high, with a portion along the south wall devoted to corridor and engineering

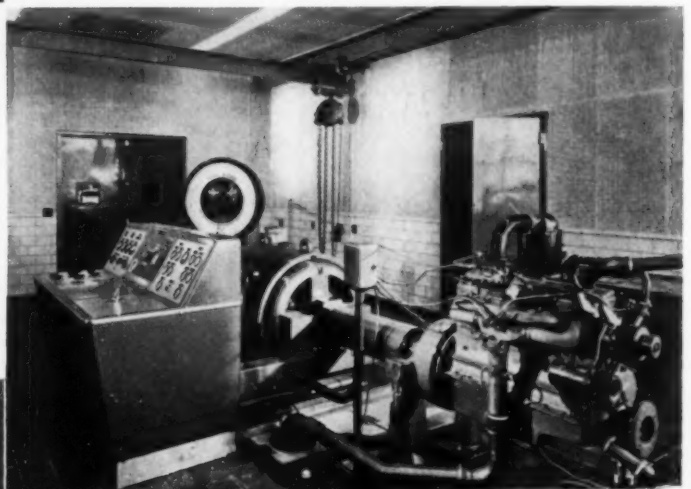




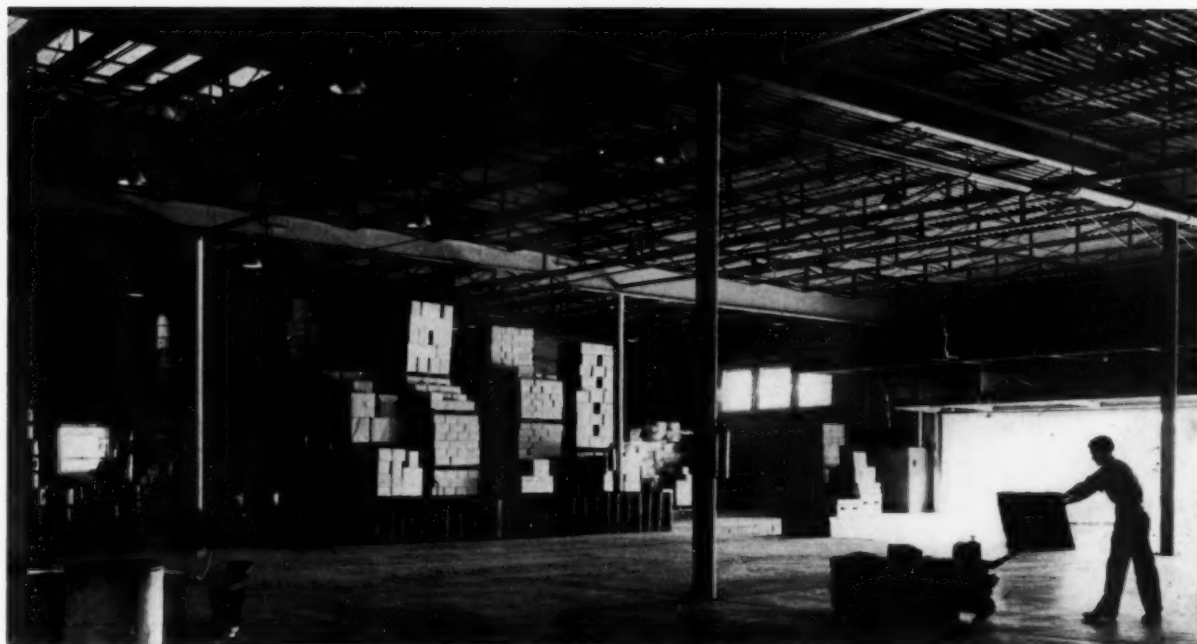
*In the dynamometer test wing all sorts of strange operations go forward. Above, "typical double end engine development test cell." Right: an engine under test, driving generator; incidentally, generators feed into electrical system, and so put to use power of engines under test. Below: main corridor in dynamometer test wing*

offices formed with metal partitions 9 ft high and open to the ceiling above. The interior face of the exterior walls is finished with flush metal partition wainscot enclosing convector heating units which are so located in relation to sash mullions that partitions may be readily relocated in modular units of 4 ft without disturbing the convector heating system. Color scheme in this area is silver green, window wall a lighter tone.

The drafting room, as described above, is one of the largest designed for this specific purpose, and presented a unique problem of lighting because of its length. Recessed fixtures were most desirable from an architectural point of view, and economy of cost ruled out single tube deep reflectors. The problem was to prevent the cumulative horizontal brightness of the fixtures at one end of the room from becoming so great that it would be a serious cause of eye fatigue to workers seated at the opposite end of the room. The problem was solved by using 2-tube continuous shallow troffers in rows across the room, each troffer having aluminum reflecting surface and aluminum egg-crate louvers with 30 deg shielding crosswise and lengthwise. The maintained lighting intensity is 70 foot-candles.



Hedrich-Blessing

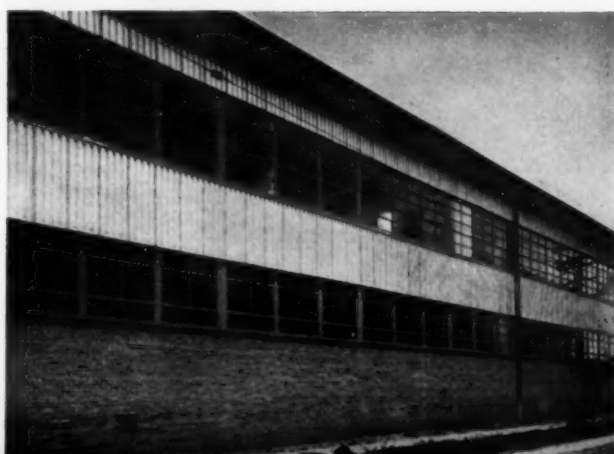
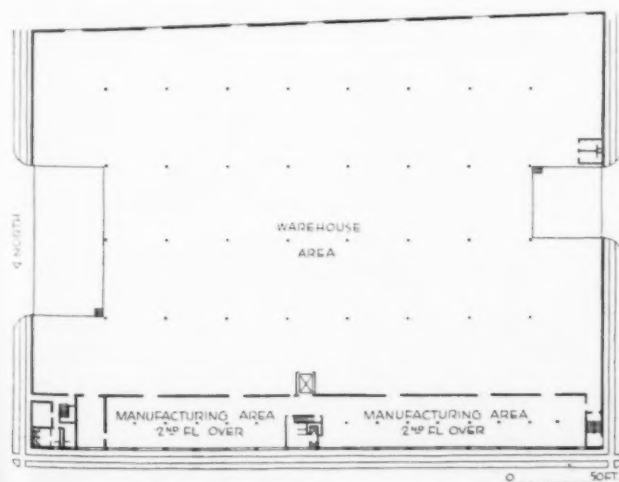


Joseph Mollitor

## DISTRIBUTION CENTER FOR HOUSEHOLD GOODS

*Warehouse for Standard Coffee Company,  
New Orleans*  
*Richard Koch, Architect*

COMPLICATIONS in selling systems, as referred to elsewhere, lead to many different combinations of warehouse, sales and service buildings. This one is a building for a truck-to-door selling system. Coffee and other staples, including blankets and kitchen utensils, are stored here, sent out by large trucks to various selling agents. Small-scale manufacturing is done in the two-story part of the building, but the principal activity is warehousing. The building is located on the water front, and has a rail siding, but three-fourths of its incoming products arrive by truck. Building is done economically but pleasantly with concrete block and brick walls, steel pipe columns, steel beams and joists.

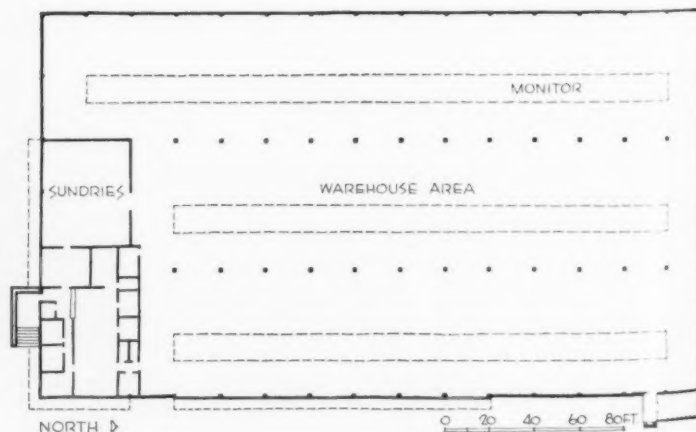




## WAREHOUSE AND OFFICES FOR WHOLESALE GROCER

*For Smart & Final Co., Phoenix, Arizona*  
*McClellan, MacDonald & Markwith, Architects*  
*Buttress & McClellan, Inc., Contractors*

IN SOME LINES of business, the true wholesale concern seems to have disappeared, but here is one manifestation of a wholesaler who seems to be very much alive. The new building, measuring 100 by 300 ft, is largely warehouse space for grocery products, but there is a small group of offices. While the building is economical, its street front is designed to bring out the office portion, and to take full advantage of advertising value. The structure employs a system of precast concrete panels and welded light steel frame patented by the contracting organization. The 100-ft width of the building is divided into three spans; column spacing in the other direction is 20 ft. Roof is arched over the longer spans, but the arch is modified by monitor sections which run virtually the length of the building.





*Truck docks occupy nearly all of one side of the building, each opening being virtually the full space of 20 ft between columns*



Stuart A. Weiner



*Dock openings are closed just by rolled up mesh screens. Interior has 19-ft ceiling, gets daylight from three long monitor sections*

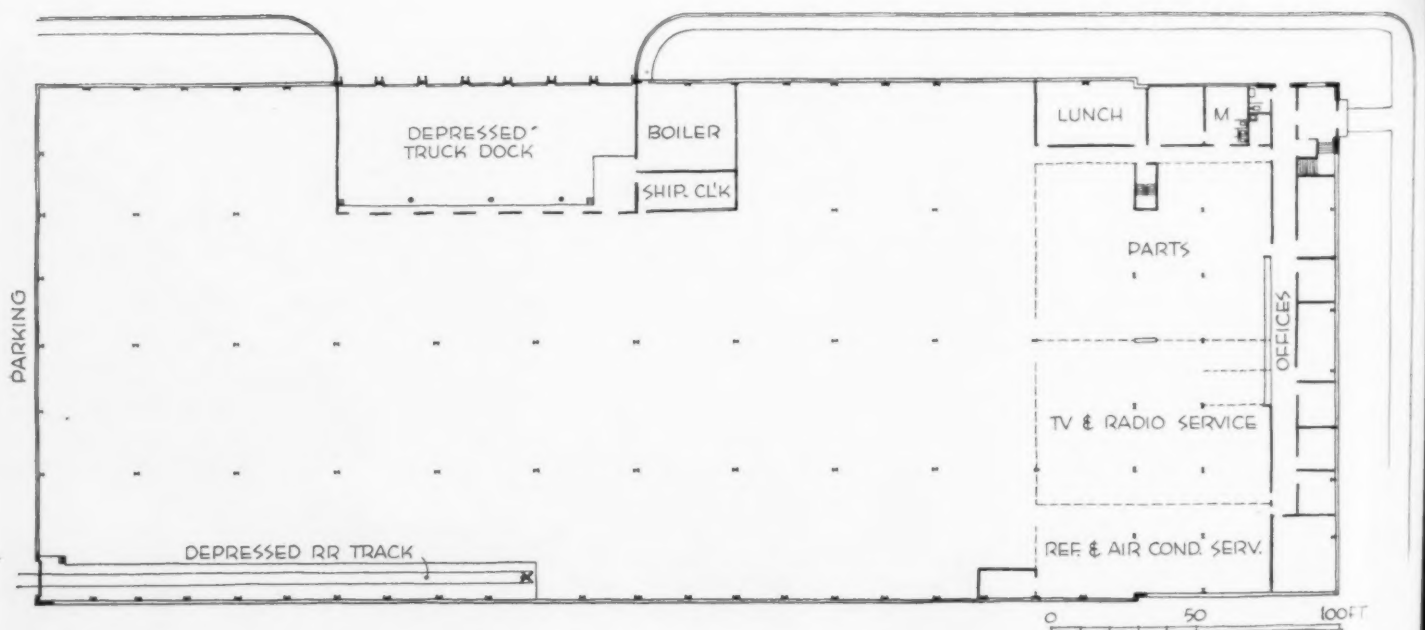
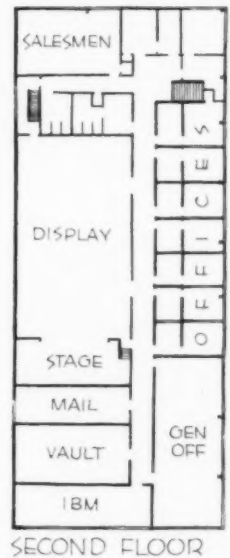




## WAREHOUSE AND OFFICES FOR PHILCO

*Clearing Industrial District, Chicago  
John S. Cromelin, Architect*

A FAIRLY TYPICAL TYPE of building in today's distribution systems, this one houses sales offices, display, service department and warehousing for Philco Distributors, Inc. The warehouse portion is quite large, is served by a railroad siding and a large truck dock. Executive offices are air conditioned with a central system for interior spaces, individual room units in rooms along the outside wall; these are used also as display units, will be replaced as models change. Note line of grills along second floor for air intakes. Construction is of light steel frame, masonry walls, concrete floor.



Hedrich-Blessing





## WAREHOUSES

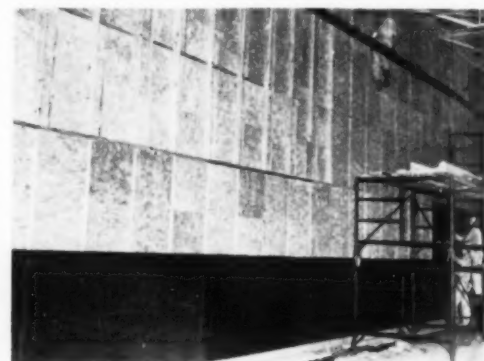
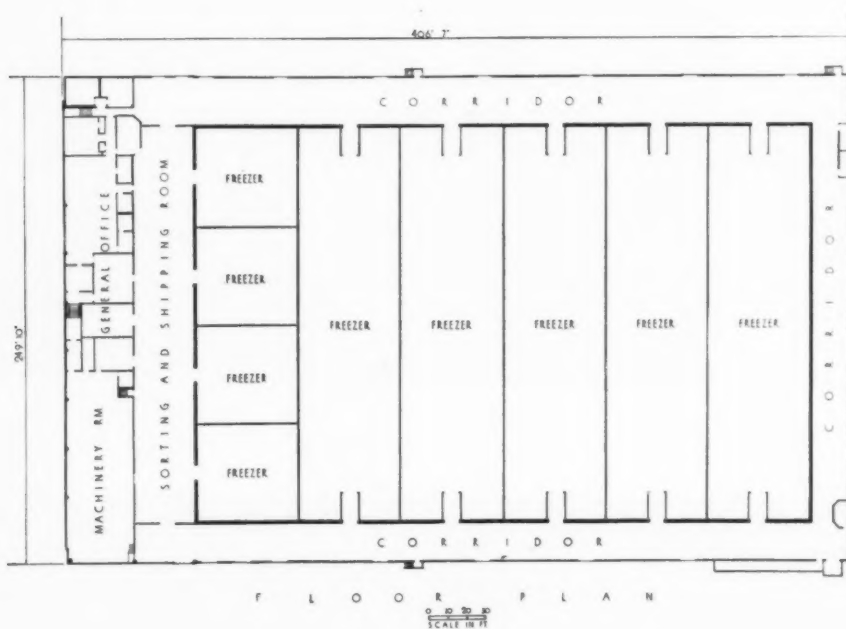
# REFRIGERATED WAREHOUSE FOR FROZEN FOODS

*Mid-South Refrigerated Warehouse Company, Memphis, Tenn.*

*A. Epstein and Sons, Inc., Architects and Engineers*

**T**HIS IS ONE of seven huge refrigerated warehouses done by this firm of architects, in a rapid expansion of cold storage facilities that is fairly general over the country. This one covers two and a half acres, cost \$2,000,000. It contains 1,300,000 cu ft of freezer capacity, at temperatures down to minus 20 deg. Roof construction is structural steel beams, long-span bar joists and precast concrete slabs. Enclosing walls, both exterior and interior, are tilt-up reinforced concrete 6 in. thick. A dry-wall method of insulation was employed throughout. The concrete tilt-up walls were prepared

with a vapor barrier of laminated foil paper sprayed with asphaltic cement with all laps brush-sealed. Then followed a layer of fiber glass insulation between horizontal girts or walers, with a kraft paper convection barrier at each horizontal joint. A second layer was then installed level with blocking to receive outer studs. Then vertical studs were attached to the walers, and a third layer of insulation added between studs. Then a layer of 1/8-in. hardboard completed the inner side. Walls then have 8 in. of fiber glass insulation, with vapor barrier on the outside; 10 in. of insulation on the ceiling.



Building is group of huge deep-freeze rooms surrounded by corridors and loading docks. A nice problem was to keep floors from heaving due to frost formation in sub-soil. A grid of vitrified tile, acting as air ducts, was installed under heavily insulated concrete floor. Thermocouples show when temperature drops to freezing, when heated air is introduced into the ducts



# ARCHITECTURAL ENGINEERING

## TRUCK TERMINALS



Riss Motor Freight Terminal, Boston, Mass.

Gottcho-Schletsner

### PART 1

#### DESIGN SUGGESTIONS FOR TRUCK TERMINALS

*Site Engineering*

*Dock Dimensions and Layout*

*Materials Handling Techniques*

*Communications Systems*

### PART 2

#### THREE TERMINALS: STUDIES, EXPERIENCE AID PLANNING

*Analyses of existing terminals, past experience and knowledge of materials handling were guides for greater efficiency and more economical construction*

#### INTRODUCTION

WITH INDUSTRY becoming more decentralized and moving into new areas, the trucking business is becoming increasingly important in our economy and to the architect. To take care of the increased shipping by truck, between 60 and 70 million dollars were spent in 1952 for truck terminals.\*

Many of these terminals were designed with the services of an architect, but it is possible that this type of building has escaped the attention of some architects, since terminals may be grouped unconsciously with warehousing. Although there are obvious similarities, there are many differences that bear investigation,

mainly due to the fact that freight generally arrives and leaves the same day.

The trucking industry has developed many standards in facilities and equipment through the aid of personnel trained in terminal operations and management, assistance from materials handling consultants, and experience, but there are still features that call for the aid of an architect.

Some of the aspects of truck terminal design include: (1) site selection, (2) circulation patterns for the site and truck dock, (3) estimation of required dock dimensions, (4) design of office,

dormitory and feeding facilities, (5) selection of economical construction systems and materials, (6) layout of communications systems.

There is evidence that as trucking terminals increase in number, size and complexity, the trucking industry is becoming more conscious of terminal appearance and engineering and is developing an increasing awareness of community relations. All this adds up to further opportunities for the architect, in cities and towns of all sizes.

\* Figures from American Trucking Association, Inc.

*Note: The Terminal Operations Council of the American Trucking Associations, Inc. is planning to issue shortly a manual, "Planning the Truck Terminal"*

This portion has been condensed from the manual, "Principles of Freight Terminal Operations," prepared by Drake, Startzman, Sheahan and Barclay, Distribution and Materials Handling Consultants for the Common Carrier Conference of the American Trucking Associations, Inc. The consultants studied some 20 terminals of every size and type across the country. All sorts of handling systems were encountered, tonnage and man hours measured and costs computed. At the conclusion of the field surveys, data and information were evaluated to find the best methods and techniques for the industry

### Site Selection

The site must accommodate: (1) a dock for handling freight transfer and temporary storage, (2) a shop, (3) a parking area for trucks, (4) apron areas for maneuvering, (5) driveways and (6) office space. Minimum requirements include the dock, aprons and driveways.

After land cost, site development, and zoning regulations have been investigated, the following terminal operations must be analyzed in selecting the site: (1) proximity to pickups, deliveries and connecting trucking firms, (2) accessibility to roads, (3) traffic

congestion and obstructions such as bridges and railroad crossings, (4) transportation for employees, (5) available utilities.

Travel distance to and from major customers should be studied: i.e., consignees; shippers; and connecting carriers, affiliated trucking companies and warehouses.

A study should be made to determine the best location for customer service. This can be done by dividing the area served into sections according to pickup routes, listing the tonnage picked up and delivered in each section, and then

determining a ton-mile figure for each proposed site. But even if one site has a low ton-mile rating, it may be inaccessible or in a heavily congested area.

### Dock Position

The weather will dictate to a great extent the dock position on the site. The length of the dock should run in the direction of the prevailing wind, if space is available, and if traffic and expansion requirement can be met. Claims and rehandling can be reduced if the end of the dock faces driving wind, rain or snow.

*Starts on page 178*



**Central Freight Lines Inc., Dallas, p. 180.** Designed to transfer huge quantities of freight—6 million lb every 24 hr—terminal materials handling system is expedited by extensive communications and an underfloor conveyor

**Yellow Transit Freight Lines, Chicago, p. 182.** One of two new terminals at the Clearing Industrial District, it is an economical prototype design using long span steel joists



**Transcon Lines, Los Angeles, p. 178.** Main feature is the suspended wooden roof which has a 35-ft overhang, shielding trucks from hot sun. Two years of planning, including a tour of major terminals, helped simplify and streamline operating procedures





Another decision to be made is whether the trailer trucks or pickup trucks should be nearest the street if the site borders on one street only. If there is enough space on the side away from the street, road equipment (trailer trucks) should be located there. The street side should be assigned to pickup and local delivery activity because of the higher turnover.

### Approach to the Dock

There should be easy access into the terminal for all trucks. As sizes of trucks and trailer equipment increase, maneuvering space increases. This is largely dependent on: (1) overall length of the tractor-trailer unit, (2) the width of the position into which the vehicle must move (called spotting), (3) the turning radius of the tractor. (Most trucks and trailers are 8-ft wide.)

The width of this dock position affects not only the yard area for maneuvering, but is also a factor in column spacing and location and width of aisles in addition to the area available for storing freight. For example, a 12-ft space (or position) will give a dock operation which uses pallets 30 per cent more storage than a 10-ft position. The 12-ft position is the best for most terminals since a narrower one may result in occasional damage to equipment and takes more time for maneuvering.

Turning radii of tractor-trucks have a definite bearing on space required for maneuvering as indicated by the table in Fig. 1.

### Other Site Problems

**Grading.** Roofs and canopies should not be drained into truck positions in front of the dock. The site should be graded so that there will be no danger of freight falling from trucks backing into dock position; also when tractor and trailer slopes vary, these units are difficult to couple. Sharp grades cause difficulty in maneuvering and in poor traction if there is ice or snow.

**Location of Shop.** The value of a nearby shop will vary with the terminal operation and its location within the particular trucking system. Some terminals have major maintenance and repairs, while others are equipped to handle only emergency or minor jobs. The closer the shop to the dock, the better, without interference with other yard requirements or causing traffic congestion.

**Truck Parking in the Yard.** The peak number of trucks to be parked simul-

taneously will determine the area required. Pickup loads sometimes accumulate in a parking area because of insufficient space at the dock. It is important that the travel time be as small as possible. Also security is improved if the parking area is close to the main terminal activity.

**Paving.** Good paving saves money on equipment repair and claim expense. Paving should be designed for local soil and wheel load conditions by a competent engineer. Generally, paving for 18,000-lb axle loads on most topsoils should not be less than a 6-in. thickness of 2000-lb concrete reinforced with 6 by 6 in. No. 8 wire mesh and provided with expansion fillers on 30-ft. centers; or 8-in. crushed rock or clean road gravel and 1½ in. of hot- or cold-rolled asphalt topping. If asphalt is used, concrete should be provided where trailer landing gear rests on the ground.

**Fences.** Fencing will provide protection for loads parked overnight. It should be high enough to prevent freight from being thrown over, and heavy enough to prevent holes from being cut. Bumpers made of heavy timbers or utility poles will prevent vehicles from backing into the fence. Vertical supports of heavy pipe or rail sections driven into the ground will hold the bumper in place.

### Dock Design

**Column Spacing.** This is related to the width of truck positions at the dock, working area and aisles, and storage space. The ideal freight dock should be free of columns except at the outer edge. If columns in the working area cannot be avoided, they should be of steel or concrete rather than wood.

The columns should be on 24-ft centers to allow 12 ft for each of two road trucks. Then three spaces will be available for pickup equipment.

**Doors.** If all freight is cleared at the

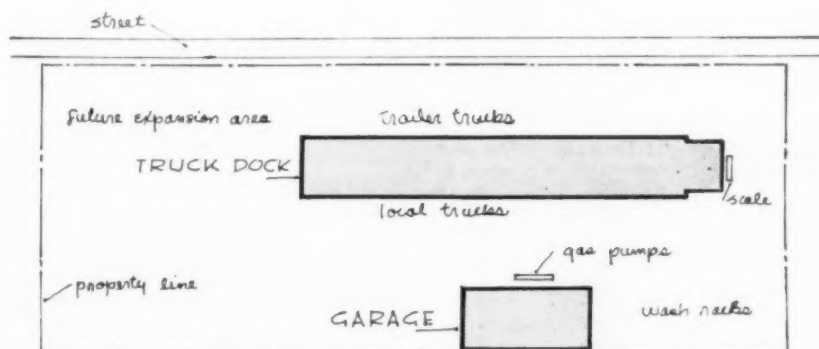
end of the working day, and nothing is stored that may be stolen or damaged by the weather, doors are not necessary. If doors are provided, either 10- or 20-ft units can be installed if the columns are centered at 24 ft. Most terminals are standardized on 10-ft doors. If the door hardware is not carefully located, it may be possible for the fork trucks to run into the tracks. In some cases, docks are designed to allow the doors to roll out under the roof overhang.

**Ceiling Height.** Requirements for overhead clearance vary depending on the type of operation and the amount of freight to be stored. A manual operation will be limited by the reach of the worker in stacking the freight, and clearance should be at least 7 ft. When fork lift trucks can be used effectively, at least a 9-ft stack is required, but recommended clearance is 12 ft where much freight is stored.

**Roof Overhang.** Canopies or roof overhangs should be as wide as possible consistent with sound building practice. Additional construction costs are offset in the long run by reductions in claims due to reductions in damaged freight and improved morale, stimulated by improved working conditions. Trailers left in the open can build up temperatures 20 degrees higher than the outside air, which can mean lowered working efficiency and possible spoilage of perishables.

**Floors.** The most practical material for docks is reinforced concrete. A fine float finish provides a good surface for fork trucks. Carborundum or metal filings used in the concrete for surfacing adds longevity and improves traction.

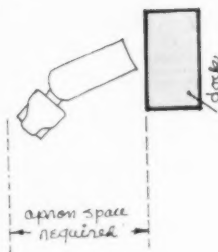
When the dock floor is built on fill, condensation can be reduced by providing a 6-in. layer of coarse granular fill under the slab. If there is air under the slab it should be circulated to help achieve the same result.



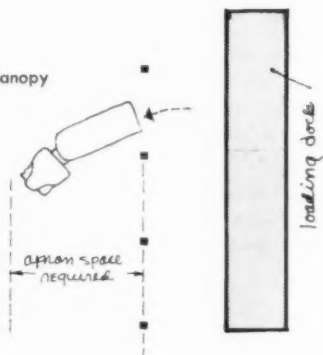
BASIC ELEMENTS OF A TRUCK TERMINAL

# MANEUVERING SPACE FOR TRAILER TRUCKS

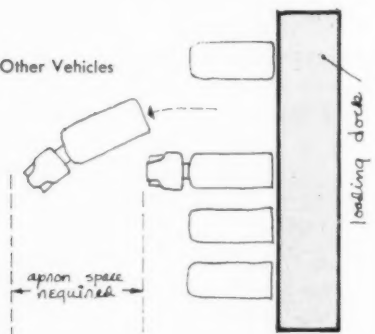
Unobstructed Dock



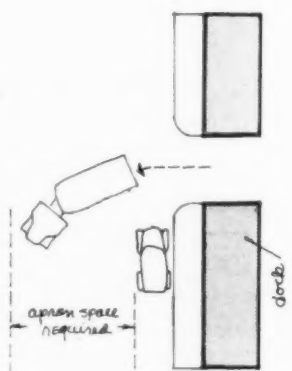
Post-supported Canopy



Alongside Other Vehicles



Driveways and Stalls



Length of Tractor and Trailer, ft	Truck Dock Space O-C, ft	Apron Space, ft
35	10	46
	12	43
	14	39
40	10	48
	12	44
	14	42
45	10	57
	12	49
	14	48

**Dock Dimensions — Height.** The distance between the pavement and floor level of heavy duty transport equipment averages 51 in. Depending on the type of road equipment used, the dock height will vary between 50 and 54 in. Preliminary construction standards of the American Trucking Associations, Inc. recommend a standardized height of 52 in. on the trailer side.

Sufficient dock space should be allocated to light trucks, depending on the activity of such equipment. A height of 45 in. will be satisfactory for most pickup operations; however, the equipment should be measured.

The apron may be tapered down toward the dock to compensate for extreme variations between body and dock height. But the rain may run down the trailer and drop on the freight unless a rubber sill is provided on top of the trailer to divert the water to the sides.

Timber bumper guards prevent damage to the dock and should be attached by countersunk bolts so that sections may be replaced. Steel capping may be attached to the top of the timber to lengthen its life.

Several methods have been devised to overcome difference in height between the dock and the vehicle, ranging from smooth pieces of boilerplate to hydraulic leveling devices, either built into the dock itself or into the pavement.

**Dock Length.** The principal determinant of length is the number of trucks to be spotted (parked) at one time at the dock. The prime factor establishing the width is the quantity of freight to be floored. Factors involved in dock length include (1) number of outbound schedules, (2) number of pickup routes, (3) characteristics of the freight, and (4) interline policy of the company (interline freight is that delivered to or received from another carrier).

The number of outbound trailers or trucks spotted for each schedule of freight plus the number of pickup trucks and other inbound trucks unloaded at the same time will frequently determine the maximum truck positions and thus the dock length.

Another factor is the amount of transfer or intraline freight handled. (Intraline freight comes in on one segment of a trucking system and is transferred to another.) If an outbound truck is always available, the freight can be moved from the inbound truck to the outbound without moving it across the dock.

Also to be considered is the policy on delivery of interline freight. At some

terminals, all or part of the freight may be held on the dock awaiting pickup. In other cases it may be delivered to the carrier, eliminating dock storage. Sometimes the freight is loaded directly into equipment of the foreign carrier at the dock, so that additional loading spots will be required.

Dock length can be computed on the basis of the maximum number of trucks to be spotted at one time multiplied by the 12-ft position allowance.

**Dock Width.** After the fixed installations have been located on the dock, the width required is determined by the peak storage and whether or not special materials handling equipment is used.

At small terminals, 45-ft wide docks are usually sufficient. For fork lift truck operation a 60 to 70 ft dock is suitable. If a dragline conveyor is used, the dock will be wider generally as the equipment itself takes away 5 ft of dock space and 5 ft either side of the dragline should be left free. If a dragline is used with way station freight, the suggested width is 80 ft; if no way freight is handled, a 60 ft dock is adequate.

Storage requirements are at a maximum if the trucks are to drop off a number of different shipments en route, since all freight must be stored on the dock until all shipments are ready, and then loaded in reverse order. (This is called peddle freight when it is loaded in customer order for delivery directly from the loaded vehicle. It is called way station or block loading when trucks are loaded in sections for drop-offs en route; each section contains one or more shipments.)

In addition to truck position space and storage requirements, the dock requires aisle space for hand trucks and motorized fork trucks. If the dock is operated with two-wheeled hand truck equipment, cross aisles of 3½ ft and side aisles of 5 ft should be used. If the dock uses a fork truck and pallet system, cross aisles should be at least 10 ft wide and side aisles 12 ft. The same dimensions should apply for four-wheeled hand truck equipment.

**Dock Layout.** The dock requires aisles for the flow of traffic and storage space for freight. At least one such aisle should serve two vehicles. In this case it should be at the center of the 24-ft double vehicle position and have a 10-ft width.

The most efficient layout for finding shipments has single rows of pallets on each side of the aisle. With larger requirements, it is necessary to use multiple rows, and more pallets must be

moved to reach the desired shipment. The most practical arrangement is the double row of pallets. This should be used for peddle freight where the identity of each shipment is important.

### Materials Handling

The three basic factors to be analyzed are: (1) function of the terminal, (2) tonnage to be handled, (3) size of the dock.

**Function of Terminal.** The volume of freight that must be held on the dock before reloading is important in determining the best handling system. The simplest problem in freight handling is the transfer operation. Freight is unloaded, sorted or checked and reloaded directly into another truck which has a single destination. No freight is floored because sequence loading is unnecessary. The operation is essentially continuous from truck to truck.

At the other extreme is the distribution operation where mixed freight is unloaded and loaded in customer order. This requires the flooring or temporary storage of virtually all shipments.

Between these two extremes is the operation requiring the unloading of mixed freight and reloading in station sequence (each station has a number of shipments). At least one station can be loaded directly as it is unloaded. Segregation of the balance of the freight is required only by station.

In the transfer operation there is no storage factor, and the handling system can be selected without regard to it. In the distribution operation the handling system must be efficient from a storage standpoint.

**Tonnage.** The volume of freight handled over the dock should include the inbound, transfer or intraline, interline and outbound traffic actually handled over the dock.

**Size.** Since the size of the dock determines travel distance, it directly affects the type of handling system to be used. Pickup truck and road truck loading and unloading should be centralized at the dock location giving the shortest travel distance.

**Handling Systems.** There are three to choose from: (1) two-wheeled hand truck, (2) the fork truck and pallet, and (3) the dragline conveyor.

Two-wheeled hand trucks should be used where the volume is small, travel short and storage relatively unimportant.

The fork truck and pallet system should be selected when the volume is

less than 300,000 lb per day and the freight must be floored prior to loading.

Maximum advantage is obtained from a dragline when it is used for transfer of freight direct from pickup trucks to the outbound road trucks. The dragline conveyor is operated by a powered chain or cable that runs overhead or in the floor pulling carts from one area to another, and can be adjusted to operate at various speeds.

The dragline is less well suited to peddle freight, but when there are peddle routes, the freight can be handled in a different way. For example, freight can be stacked on the carts so that it does not take much storage space. Another method is to stack the freight on pallets which are put on the carts and then stored by fork trucks.

In the floor-type of dragline, the chain or cable runs in a trench approxi-

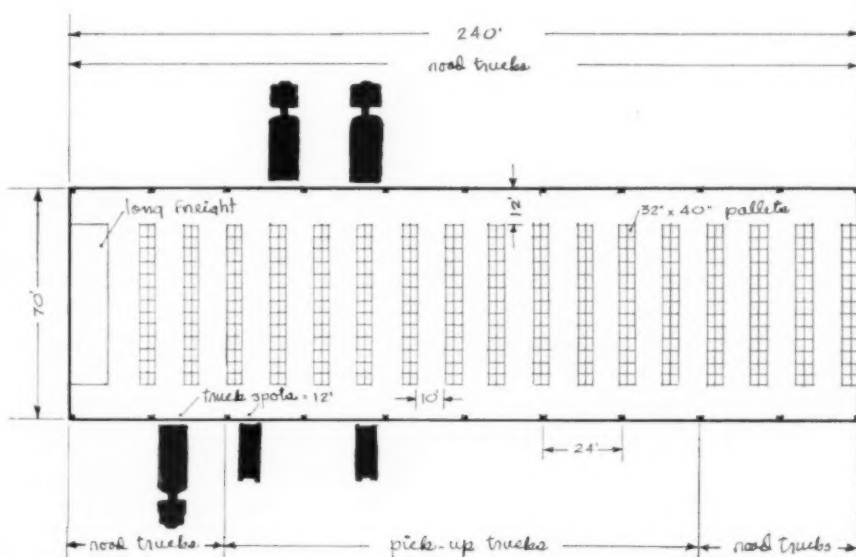
mately 12 in. square, covered except for a small slot through which a pin from the cart is dropped to engage the line. The dragline can follow any route, but the chain must be continuous for the system to be practical for terminals.

Although there are mixed feelings among terminal operators about the use of dragline conveyors, it is possible to make this generalization: the floor-type dragline has several advantages over the overhead type. There are no overhead obstructions and the carts are easier to couple. However the installation cost of the overhead dragline is less.

For direct transfer from pickup trucks to road trucks, the dragline should be set in 14 ft from the edge of the dock on both sides.

For peddle freight storage, the freight may be stored inside the dragline. Another method is to run the dragline

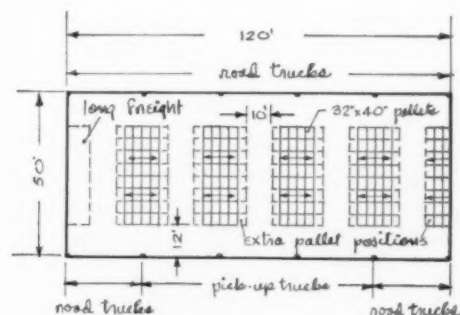
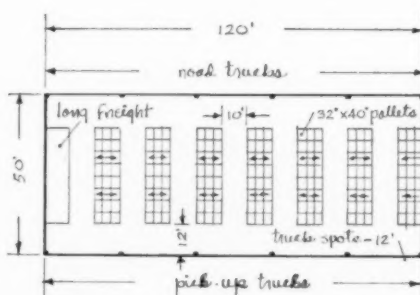
(Continued on page 194)



### THREE TYPES OF FORK TRUCK AND PALLET STORAGE

1. Above: Peddle and delivery loading where each pallet must be identified easily. (Tonnage approx. 600,000 lb per day)
2. Below, left: Combination peddle and way station loading where larger groups of pallets must be identified. (Tonnage approx. 250,000 lb per day)
3. Below, right: Block or way station loading—one shipment is a group of pallets—showing maximum use of storage. (Tonnage approx. 300,000 lb per day)

Note: pallet positions indicate maximum dock storage. All positions should seldom be filled





PART 2 | THREE TERMINALS



TRANSCON LINES  
Los Angeles, Calif.

Allison & Ribble, Architects  
Ropp & Ropp, Structural Engineers

Two years of planning, including a study of truck terminals across the country, turned out a handsome, functional terminal, whose main feature is a 35-ft canopy guarding against the weather

ECONOMICAL CONSTRUCTION, saving of steel, and streamlined operating procedures were the architects' primary concerns in their studies for this trim, wide-canopied terminal.

The client desired an economical roof structure that would cantilever over 30-ft long trailers, eliminating columns in the path of the trucks. The result was a wooden roof hung from two rows of steel columns and spanning the 70-ft dock. Columns along the length of the dock are spaced 22 ft on center which is enough room for two trucks.

In examining truck terminals across the country, Architect Ulysses Floyd Ribble did not note any universal pattern of design. He felt the need for more attention to such administrative procedures as integration of paper work with the checking of truck shipments. Also he found divergent viewpoints in the location of special facilities such as

the O.S. & D. room (over, short, and damaged freight), in the location and size of maintenance and repair service, and in the choice of materials handling systems.

Since Transcon Lines, which also has terminals in Oklahoma, Kansas and Illinois, is constantly expanding, the site was planned to allow for future additions. Now there are docking space, offices, maintenance shops and enough parking for more than 200 vehicles.

#### Roof Structure

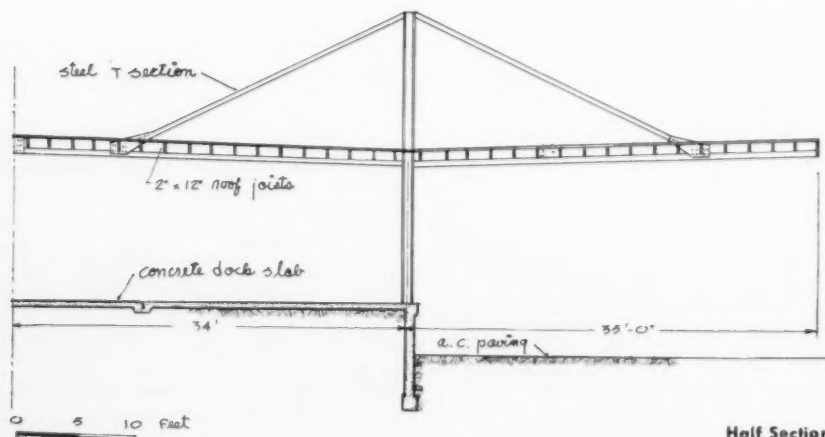
Steel "T" sections hang from the two-story-high columns to resist both the vertical load and uplift. The hangers are then connected to 45-ft wood girders. Heel connections of the columns were designed to take both the vertical load and horizontal thrust of the girders, and the columns themselves were designed to resist the moments induced

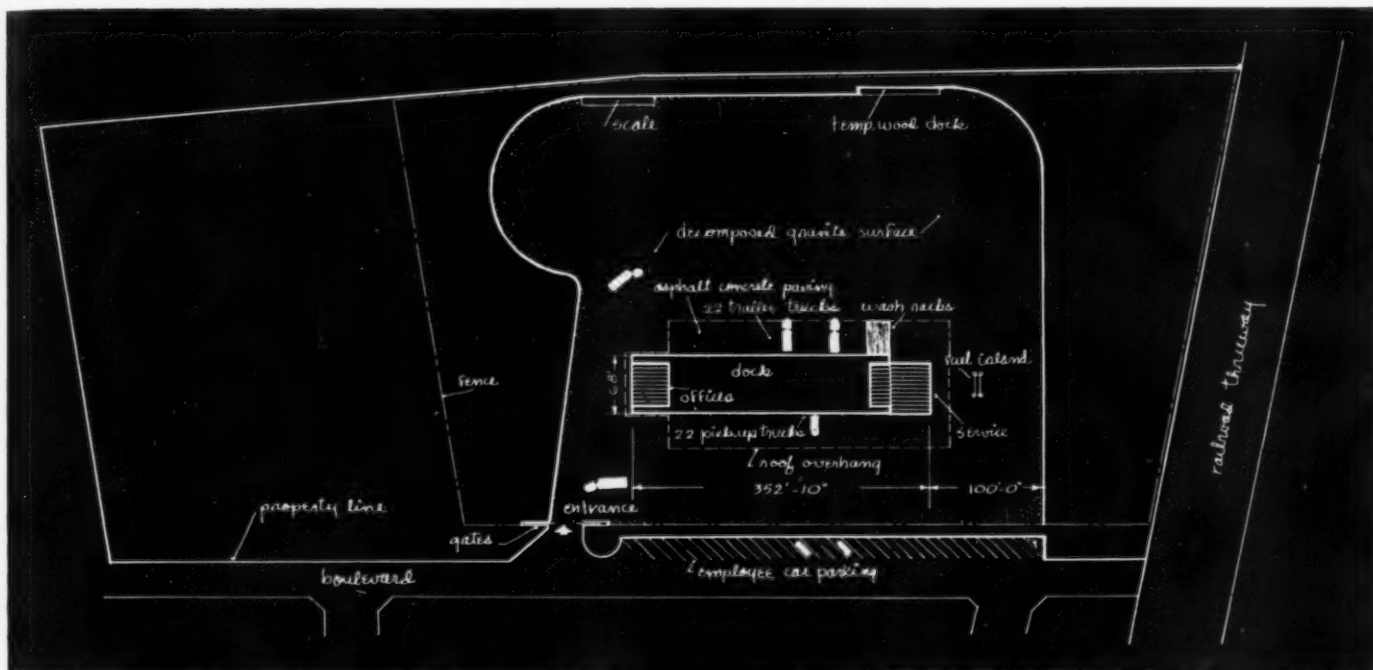
by wind or seismic forces. Three-quarter in. rods give longitudinal bracing.

Under equal loading, the load of the 35-ft canopy balances the load of the 35-ft interior half span. Under transverse horizontal load, the downward force of one interior half span balances the upward force of the adjacent span, reacting like a three-hinged arch. The column bases were pinned in this direction.

This design permitted a large overhang without expensive trusswork; steel, critical in supply at the time, was saved. The overhang provides protection from sun and rain for a total of 44 carriers which can be spotted simultaneously.

Consultants were: Ropp & Ropp, structural engineers; Stephen T. Berkly, mechanical engineer; and Foster K. Sampson, electrical engineer. The contractors were Jones Brothers Construction Co.





▲ Enclosed area adjacent service area has Gear Room, Bond Room (for drugs, liquors, etc.) and O.S. & D. Room (over, short and damaged freight)

#### DOCK DIMENSIONS

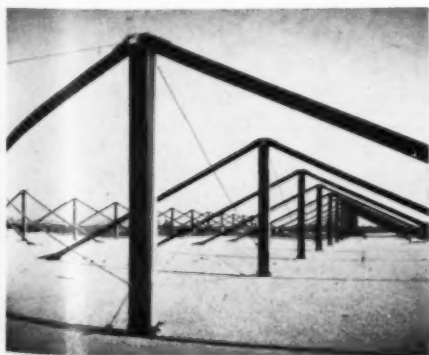
Width 70 ft

Height

Pickup side 44½ in.

Trailer side 52 in.

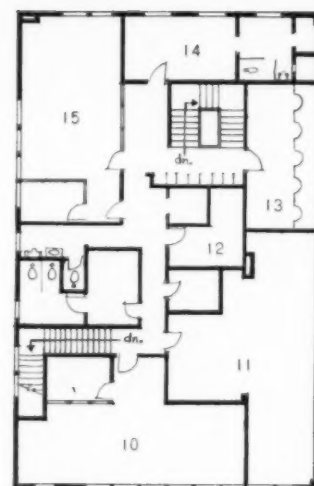
Roof Overhang 35 ft



#### OFFICE FACILITIES

##### First Floor

- |                              |                    |
|------------------------------|--------------------|
| 1. TWX Room (Message Center) | 5. Foreman         |
| 2. Billing                   | 6. Office Mgr.     |
| 3. Cashier                   | 7. Terminal Mgr.   |
| 4. Telephone Rm.             | 8. Operations Mgr. |
|                              | 9. Office          |



##### Second Floor

- |                      |                             |
|----------------------|-----------------------------|
| 10. Salesman         | 14. Line Drivers Locker Rm. |
| 11. Records          | 15. Transp. Dept.           |
| 12. Heater Rm.       |                             |
| 13. Central Checking |                             |

◀ Suspended from the ceiling are floodlights to illuminate truck interiors and signal lights (in front of columns) for loaders to call fork lift trucks



# CENTRAL FREIGHT LINES INC.,

Dallas, Texas

Handling of freight is expedited by an extensive communications system and an underfloor conveyor



SIX MILLION POUNDS of freight can be transferred from truck to truck at Central's huge Dallas terminal which has nearly 48,000 sq ft of dock space. Office and maintenance buildings are detached from the dock, making it possible for trucks to park around the entire perimeter. A total of 110 trucks can be loaded and unloaded at one time.

## Communications

An underground passageway and a pneumatic tube system connect the terminal with the office building. The pneumatic tubes are used on the dock to transfer papers between "loaders" at the trucks and checkers in a mezzanine office suspended from the roof. Other parts of the communications system include: (1) two-way voice contact between loaders carrying portable inter-

com units which plug in at jacks on the columns, and a selected checker in one of the four central checking offices; (2) signal lights to call fork lift truck operators to various truck spots; and (3) selective two-way contact between three permanently located remote stations. (For further information on how such a system works, see "Communications" in Part 1, p. 194).

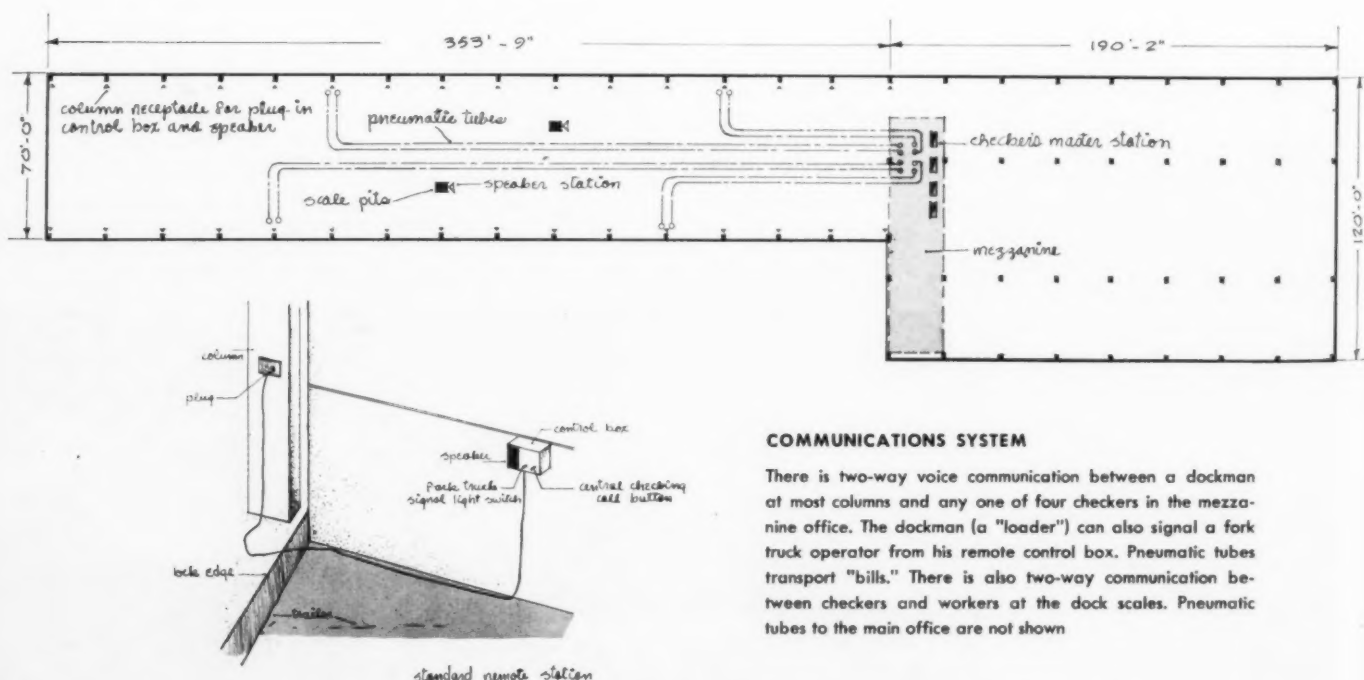
## Conveyor

The dragline conveyor consists of a moving endless chain installed under the floor to pull a stream of pallet-sized carts. These can be slipped on and off the chain very readily by means of movable pins. In this way various pieces of freight can be mechanically shuttled from one truck to another with a bare minimum of manpower.

The dock structure is reinforced concrete with long-span channel slabs of concrete for the roof. The roof overhang forms a canopy which projects more than half a truck length. Floodlights are located under the eaves.

The one-story administrative building is of reinforced concrete and has year-round air conditioning. Facilities include, in addition to office space, a living room with two bedrooms for company personnel, combination cafeteria-meeting room accommodating 90 people, and a soundproofed dormitory for drivers.

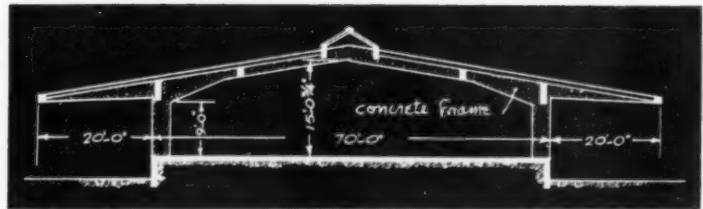
Nearby the office is a garage for speedy overhaul and maintenance of both gasoline and diesel trucks. The terminal was designed by engineers of Central Lines assisted by W. E. Lessing, Architect.



## COMMUNICATIONS SYSTEM

There is two-way voice communication between a dockman at most columns and any one of four checkers in the mezzanine office. The dockman (a "loader") can also signal a fork truck operator from his remote control box. Pneumatic tubes transport "bills." There is also two-way communication between checkers and workers at the dock scales. Pneumatic tubes to the main office are not shown.



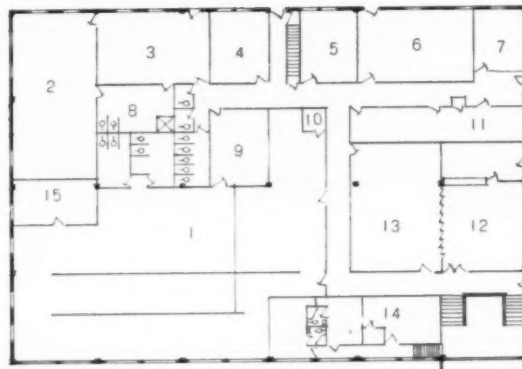


#### DOCK DIMENSIONS

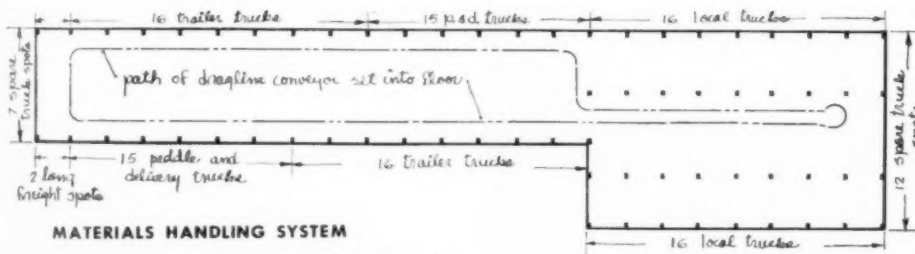
Width 70 ft, 120 ft  
Height 48 in.

#### OFFICE FACILITIES

- |                               |                            |
|-------------------------------|----------------------------|
| 1. Gen. office                | 8. Line Drivers Locker Rm. |
| 2. Dormitory                  | 9. Machine Rm.             |
| 3. Line Drivers Ready Rm.     | 10. Tele. Oper.            |
| 4. Line Dispatcher            | 11. Confer. Rm.            |
| 5. Peddle and Del. Dispatcher | 12. Cafeteria              |
| 6. P & D Driver Ready Rm.     | 13. Meeting Rm.            |
| 7. Manager                    | 14. LR & BR                |
|                               | 15. File Rm.               |

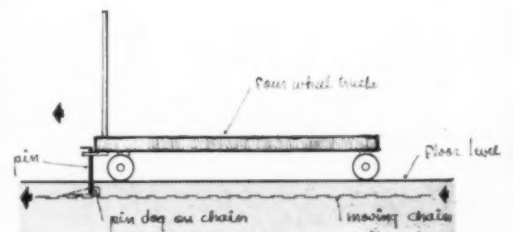


0 10 20 ft.



#### MATERIALS HANDLING SYSTEM

The dragline conveyor shuttles pallet-sized carts from one truck to another. At the wide end, freight is worked out from the center to the pickup trucks



Squire Haskins



YELLOW TRANSIT FREIGHT LINES, Chicago, Ill. John S. Cromelin, Architect Clearing Industrial District, Inc.



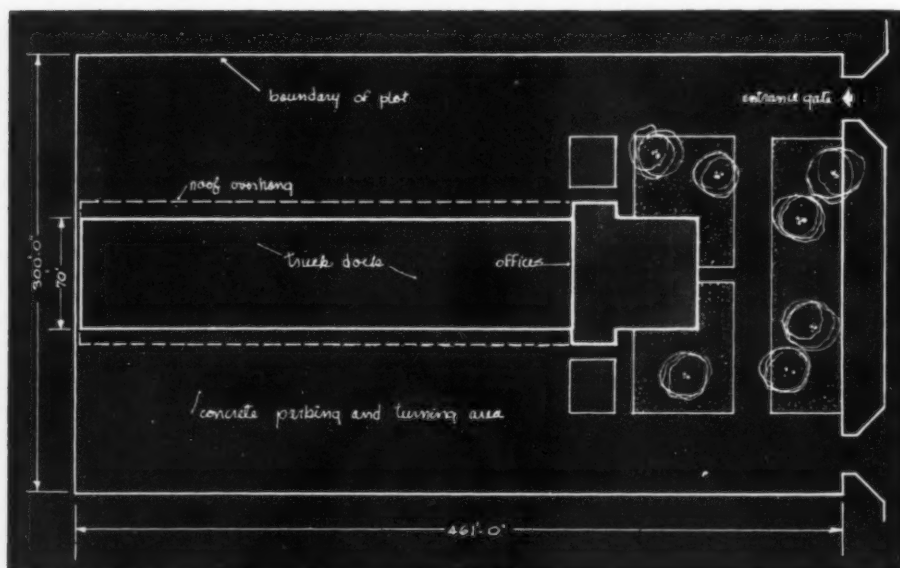
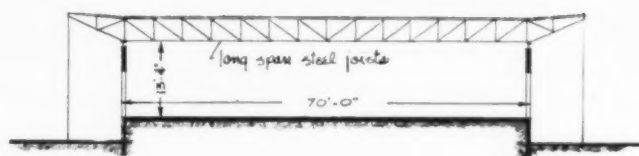
Hedrich-Blessing

A prototype design using long-span steel joists and brick walls for economy

LONG-SPAN steel joists carrying a pre-cast slab roof cover the 70-ft dock of Yellow Transit's brand new terminal. Another terminal nearby for Doyle Freight Lines is practically a duplicate.

A total of 54 truck spots are provided. The dock is divided alphabetically and doors are numbered for easy location and storage of freight. Wood overhead doors are 8 by 8 ft and 11 ft on center. Dock length is 300 ft.

Like many terminals, the office is at one end of the dock. A small service building is several hundred feet from the other end of the dock.



OFFICE FACILITIES

- |                             |                          |
|-----------------------------|--------------------------|
| 1. Lunch Rm.                | 8. Communication Windows |
| 2. Locker Rm.               | 9. Gen. Office           |
| 3. Air Cond. and Boiler Rm. | 10. Asst. Mgr.           |
| 4. O.S. & D. Stor.          | 11. Term. Mgr.           |
| 5. Dock Supt.               | 12. Lobby                |
| 6. Checkers                 | 13. Storage              |
| 7. Dispatchers              | 14. Exec. Office         |

DOCK DIMENSIONS

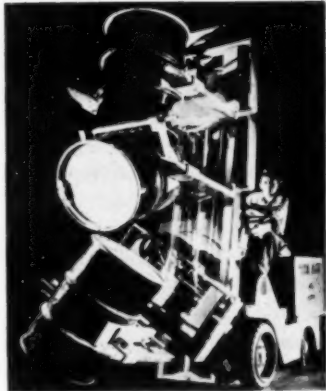
Width	70 ft
Height	51 in.
Length	300 ft
Roof overhang	9 ft



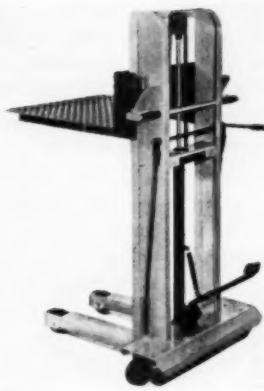
## PRODUCTS for Better Building

### EQUIPMENT FOR INDUSTRIAL BUILDINGS

#### MATERIALS HANDLING

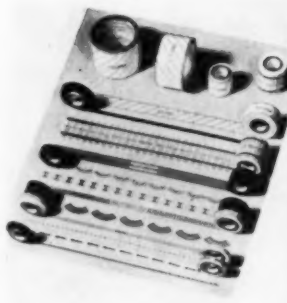


A



B

#### PLANT LAYOUT

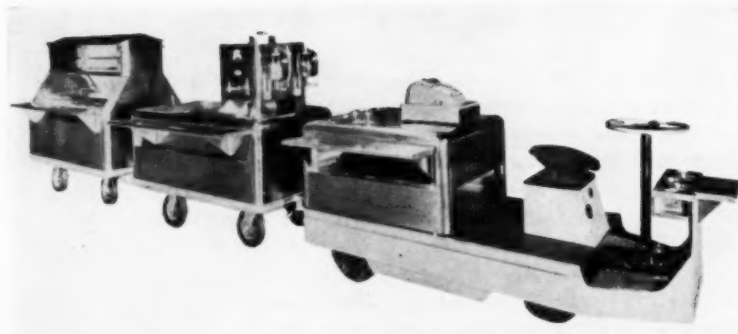


C



D

#### IN-PLANT FEEDING



E

The architect who designs an industrial building today is faced not only with an ever-increasing variety of complex special problems, but also with a formidable range and quantity of equipment designed to help solve those problems. Specification of some of this equipment occurs in categories which are the architect's direct responsibility. In other cases, while he is not directly responsible for it, the architect can by his selection of equipment help insure maximum efficiency in plant operations. On this and following pages, *Products for Better Building* presents a round-up of some of the new industrial equipment available today in a variety of categories. The range and quantity of available equipment is large, and the presentation offered here is necessarily limited. Nevertheless the industrial building designer will find a representative selection of the equipment he may be called upon to specify in plants, warehouses or terminals.

A. The "Octopus," a new Baker-Raulang 4000-lb capacity fork lift truck, has special carriage and attachments which can handle nearly a dozen different types of loads, including large drums as shown. Baker-Raulang Co., Baker Industrial Truck Div., 1230 W. 80th St., Cleveland, Ohio.

B. Big Joe hydraulic lift for either manual or battery operation has straddle type base, adjustable forks. Can be used for simplified handling of loads up to 1000 lb. Big Joe Manufacturing Co., 900 W. Jackson Blvd., Chicago 7, Ill.

C. Labelon pre-printed adhesive tape helps save time in making plant layouts. Includes standard symbols, scale either  $\frac{1}{4}$  or  $\frac{1}{8}$  in. per ft, opaque or transparent tape. Labelon Tape Co., 450 Atlantic Ave., Rochester 9, N. Y.

D. Harman scale models for plant layouts include almost every known machine tool in  $\frac{1}{4}$ -in. scale. Models may be used in combination with two-dimensional acetate-printed scale grid sheets and outline drawings. Harman Associates, Halesite, Long Island.

E. Rehco mobile food train for in-plant feeding will serve about 300 persons. It has both cold food and hot food cars and is all-electrically operated. Cold food car has Serval Supermetec condensing unit. Rehco Corp., 5846 Hooper St., Los Angeles, Calif.

(Continued on page 202)



## LITERATURE for the Office

## NEW CATALOGS FOR INDUSTRIAL BUILDING DESIGNERS

Among the many new items of product literature especially relevant to design, equipment and maintenance of industrial buildings are the following:

• *Techniques of Plant Maintenance—1953.* Volume contains the text of 61 sessions on various aspects of maintenance and plant engineering held in Cleveland in January. Over 2200 production and maintenance men attended the conference, which featured separate roundtables devoted to 11 industries: automotive, chemical, electrical, food, foundries, paper, petroleum, printing and binding, rubber, steel and textile. Ten other groups considered "Area vs. Centralized Maintenance," "Dealing with Union Labor," "Incentives and Work Measurement," "Lighting," "Lubrication," "Project Control," "Pumps

and Piping," "Sanitation," "Selling Management on the Maintenance Program" and "Maintenance Stores." General sessions were "Maintenance Essentials" and "Growing Pains of an Engineering Maintenance Organization."

Highlighted in the publication are 859 questions and answers from the general and sectional conferences. Summarized discussions from the 21 roundtables are also included, as well as texts of 20 papers read and 41 charts. The book is sent without charge to those who attended the conference; it is available to all others for six dollars postpaid. 288 pp., illus. Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

• *Balanced Industrial Ventilation.* The scope of this bulletin is limited to the problems resulting from the relationship of exhaust and make-up air systems, and the bearing it has on the heating load. Drawings of a typical exhaust system, fan products for make-

up air systems and a field assembled unit are included, as well as descriptive matter. 4 pp., illus. National Association of Fan Manufacturers, Inc., 2159 Guardian Building, Detroit 26, Mich.

• *Recommended Practice for Supplementary Lighting.* Booklet deals with many critical seeing tasks involved in fabrication and inspection for manufacturing processes and recommends lighting which supplements the general lighting systems. A table is featured, classifying visual tasks and lighting techniques for each. Described here are material and task involved, lighting requirements for each task, suggested luminaire type and location. Other tables recommend proper brightness ratios and light reflectances for interior surfaces. Price, 50 cents. 16 pp., illus. Publications Office, Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y.

\*Other product information in *Sweet's Architectural File, 1953.*

(Continued on page 250)



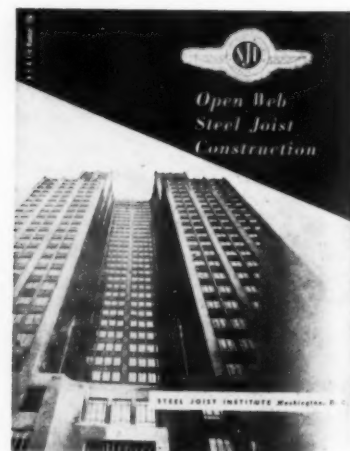
### 1953 BUILDING PRODUCTS LITERATURE WINNERS

This year's edition of the Annual Products Literature Competition sponsored jointly by the American Institute of Architects and The Producers' Council produced a total of 37 awards to manufacturers (see also ARCHITECTURAL RECORD, July, 1953, p. 12). The awards are presented for technical presentations of products, either in advertisements or manuals, which help architects in se-

lection and specification of materials.

Top winners in the 1953 competition were the two booklets shown on this page, which won Certificates of Exceptional Merit for the Steel Joist Institute and the Overly Manufacturing Company, respectively. Eleven other manufacturers received Certificates of Merit and 24 were given Honorable Mentions. Most awards for a single manufacturer

were won by Armstrong Cork Company, which received a total of 5 in 3 different classifications. Awards were made in four classes by the following jury of practicing architects: Chairman Richard M. Bennett, F.A.I.A., Chicago; Ben H. Dyer, A.I.A., Bethesda, Md.; Edwin Green, F.A.I.A., Harrisburg, Pa.; George S. Idell, A.I.A., Philadelphia; Ben John Small, A.I.A., New York.



# SCHOOL SHOP PLANNING: 4

This series of school shop plans, begun in the July 1953 Time-Saver Standards section, is presented as a guide to current thinking on layouts and equipment in the field of shop planning for vocational schools. The seven plans which will be included are award winners of an international contest held during the last American Vocational Association Convention and sponsored by the Delta Power Tool Division of the Rockwell Manufacturing Co. The contest, using the theme "School Shops for Today and Tomorrow," was divided into six divisions, according to age level and type of instruction.

A six-man jury of educators and school building planning consultants judged the plans from the following

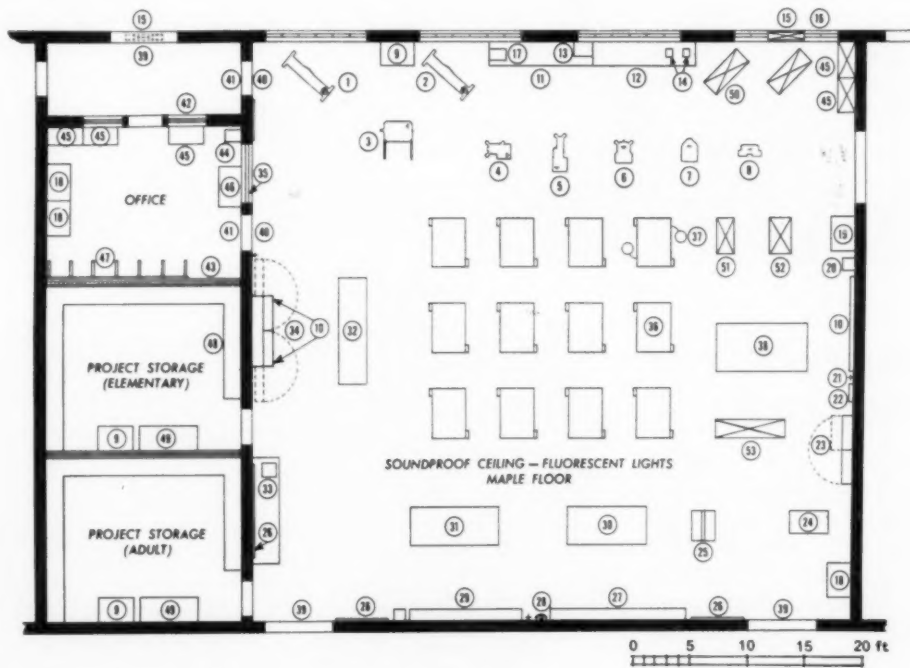
points of view: relation to vocational and industrial education; curricular integration; industrial arts application; administration of shop and accommodation to the administrative scheme of the school; and practicality from the standpoint of school construction.

Significant items noted by the jury in the majority of contest submissions were: a trend away from heavy industrial equipment to lighter power tools, with size and weight in accordance with teaching levels, and emphasis placed on more working area for students.

The plan shown on this sheet is the award winner for the general elementary school shop division, grades 5-8, and provides for 24 pupils. Subjects would include: wood,

printing, metal, mechanical drawing, plastics and home mechanics. (The equipment numbered 50-53 in the legend is for expansion, and is not included in the basic scheme.) The plan was designed by Armand G. Rehn, Director of Practical Arts, Board of Education, Newark, N. J.

The following are excerpts from the jury's comments on the plan: The plan (is) a very desirable departure from the usual elementary school shop, because it also serves as a community or neighborhood center. There are definite provisions, both in . . . equipment and storage rooms for the younger students in daily attendance and for adults in night school classes. These tools also permit an instructor to size lumber for young students.



Elementary School Shop

## LEGEND

- |                                  |   |  |   |
|----------------------------------|---|--|---|
| 1. Four Speed Lathe              | 18. Steel Cabinet 24" x 36" x 72"         | 31. Home Mechanics Bench   | 41. Wire Grill Panel Over Doors                     |
| 2. Sixteen Speed Lathe           | 19. Foreman's Desk—Steel                  | 32. 9 ft Assembly Bench  | 42. Wire Grill Panel                                |
| 3. 10" Circular Saw              | 20. Drinking Fountain                     | 33. Mitre Box Saw  | 43. 3 ft Wire Grill                                 |
| 4. Band Saw                      | 21. Master Machine Control Switch         | 34. Wood Tools Cabinet 6 ft x 12 ft. Note—Green Glass Blackboard | 44. Three-Drawer Filing Cabinet—Legal Size          |
| 5. Scroll Saw                    | 22. Switch Box                            | (A) Upper Half of Each Door on Outside                           | 45. Steel Cabinet 19" x 36" x 72"                   |
| 6. Disc Sander                   | 23. Metal Tools Cabinet 6 ft x 6 ft       | (B) On Wall Space in Back of Opened Tool Cabinet Doors           | 46. Teacher's Desk and Chair                        |
| 7. 14" Drill Press               | 24. Pilot Hand-lever Press with Cabinet   |  | 47. Open-Side Metal Lumber Rack                     |
| 8. Tool Grinder—1725 R.P.M.      | 25. Type Cabinet                          |  | 48. Four 18" Shelves, 24" apart                     |
| 9. Steel Cabinet 24" x 35" x 42" | 26. Bulletin Board                        |  | 49. Finishing Bench (with light)                    |
| 10. Green Glass Blackboard       | 27. Reference and Project Display Shelves |  | 50. Metal Lathe, with Floor Cabinet. 9"—6 speed     |
| 11. 9 ft Maple Top Bench         | 28. Telephone                             |  | 51. 7" Shaper, with Floor Cabinet                   |
| 12. 9 ft Metal Top Bench         | 29. 10 ft Wash Trough                     |  | 52. Milling Machine, Floor Cabinet 10"—Table Travel |
| 13. Oven for Plastics            | 30. Reference Table—Six Chairs            |  | 53. Sheet Metal "Shop-On-A-Bench"                   |
| 14. Combination Furnaces         |   |  |   |
| 15. Vent Fan (30")               |   |  |   |
| 16. 9 ft Window                  |   |  |   |
| 17. Buffer                       |   |  |   |



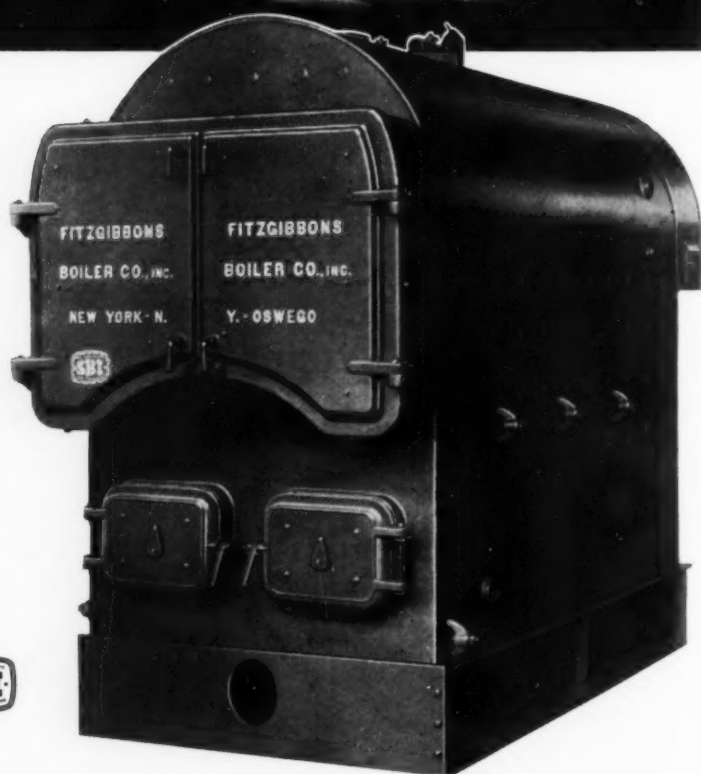
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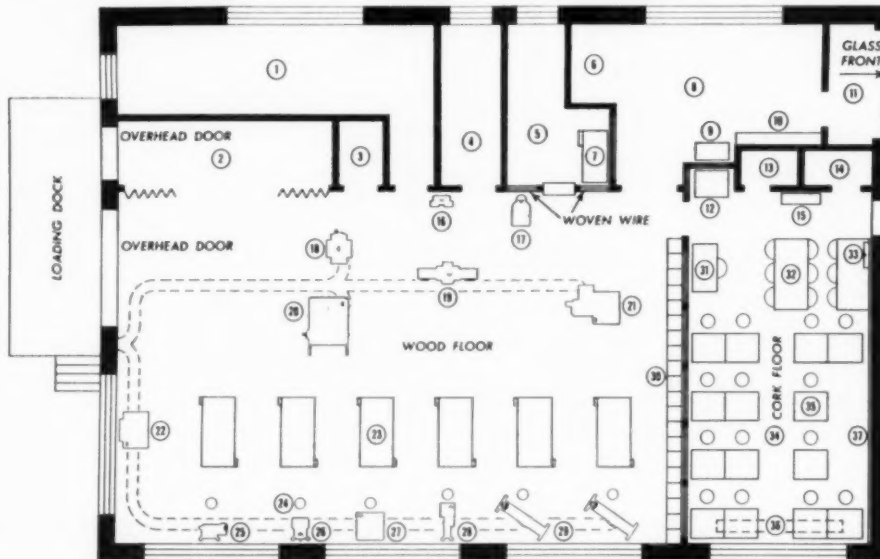


# SCHOOL SHOP PLANNING: 5

For a woodwork shop at the senior high school level, grades 10-12, the layout gives the instructor clear visibility of every section of the shop, and allots safe working areas and traffic paths in a manner to minimize disturbance created by the movement of students within the shop

while teaching is in progress. The shop has three main areas: wood shop, planning room and finishing room. The lumber room is located so it can be loaded from the outside, yet have easy access from the interior. A chip and sawdust exhaust system is located under the shop

floor, and a spotlight is specified over each machine. The planning room is equipped with a movie projector and sound system. The designer and award winner for this plan is Joseph A. Williams, Industrial Arts Instructor, Lovejoy H. S., Ill.

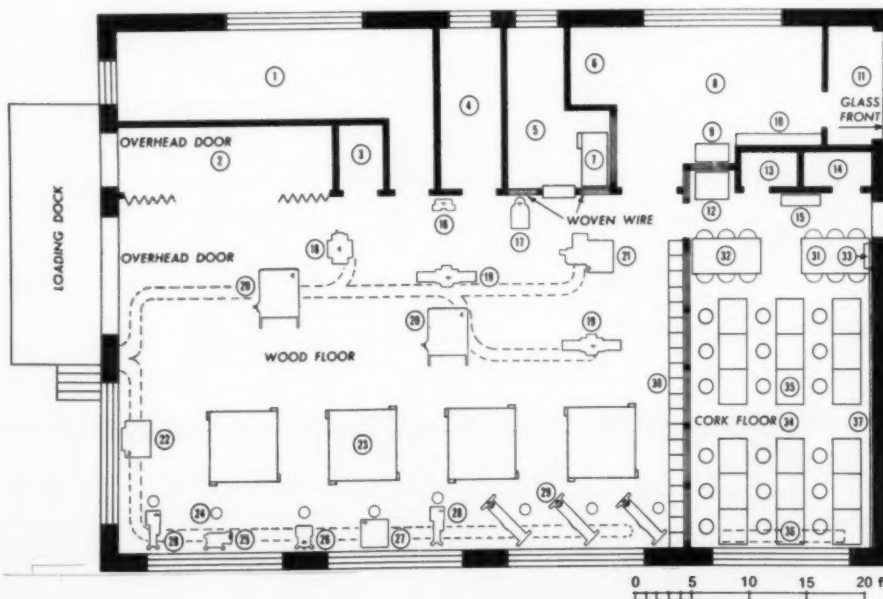


Senior High School  
Woodwork Shop

Basic Scheme—  
12 Pupils

## LEGEND

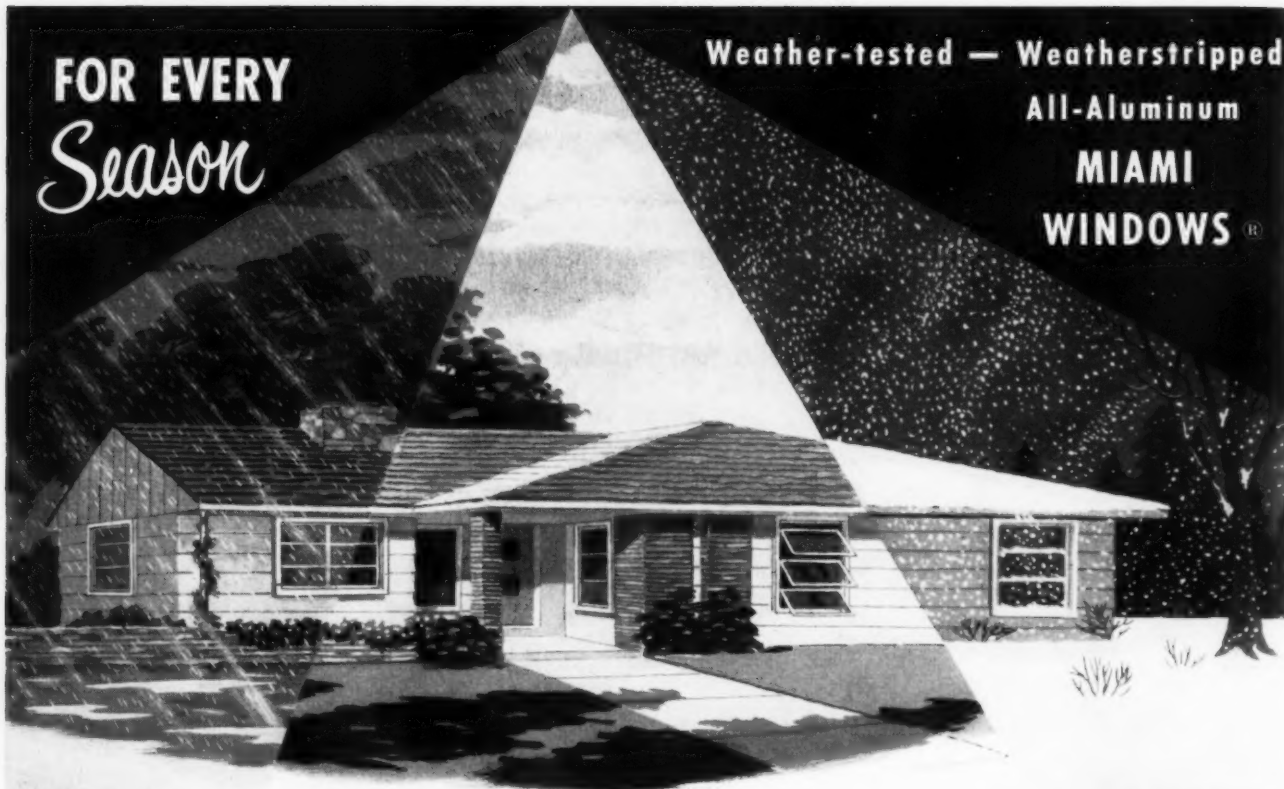
- |                             |                            |                    |                                  |
|-----------------------------|----------------------------|--------------------|----------------------------------|
| 1. Project Storage Room     | 11. Exhibit Case           | 21. 36" Band Saw   | 31. Teacher's Desk               |
| 2. Lumber Storage           | 12. Blueprint Washing      | 22. Radial Arm Saw | 32. Reading Table                |
| 3. Turning Short and Scraps | 13. Projection Booth       | 23. Work Bench     | 33. Shelves                      |
| 4. Storeroom                | 14. Drafting Room Supplies | 24. Spotlight      | 34. Planning Room                |
| 5. Tool Room                | 15. Blueprint Machine      | 25. 6" Belt Sander | 35. Drafting Tables              |
| 6. Spraying Booth           | 16. Grinder                | 26. Disc Sander    | 36. Projection Screen in Ceiling |
| 7. Work Bench               | 17. Drill Press            | 27. Shaper         | 37. Blackboard & Corkboard       |
| 8. Finishing Room           | 18. Planer                 | 28. 24" Scroll Saw |                                  |
| 9. Sink                     | 19. Jointer                | 29. Lathe          |                                  |
| 10. Drying Shelf            | 20. 12" Tilting Arbor Saw  | 30. Lockers        |                                  |



Expanded Scheme—  
16 Pupils

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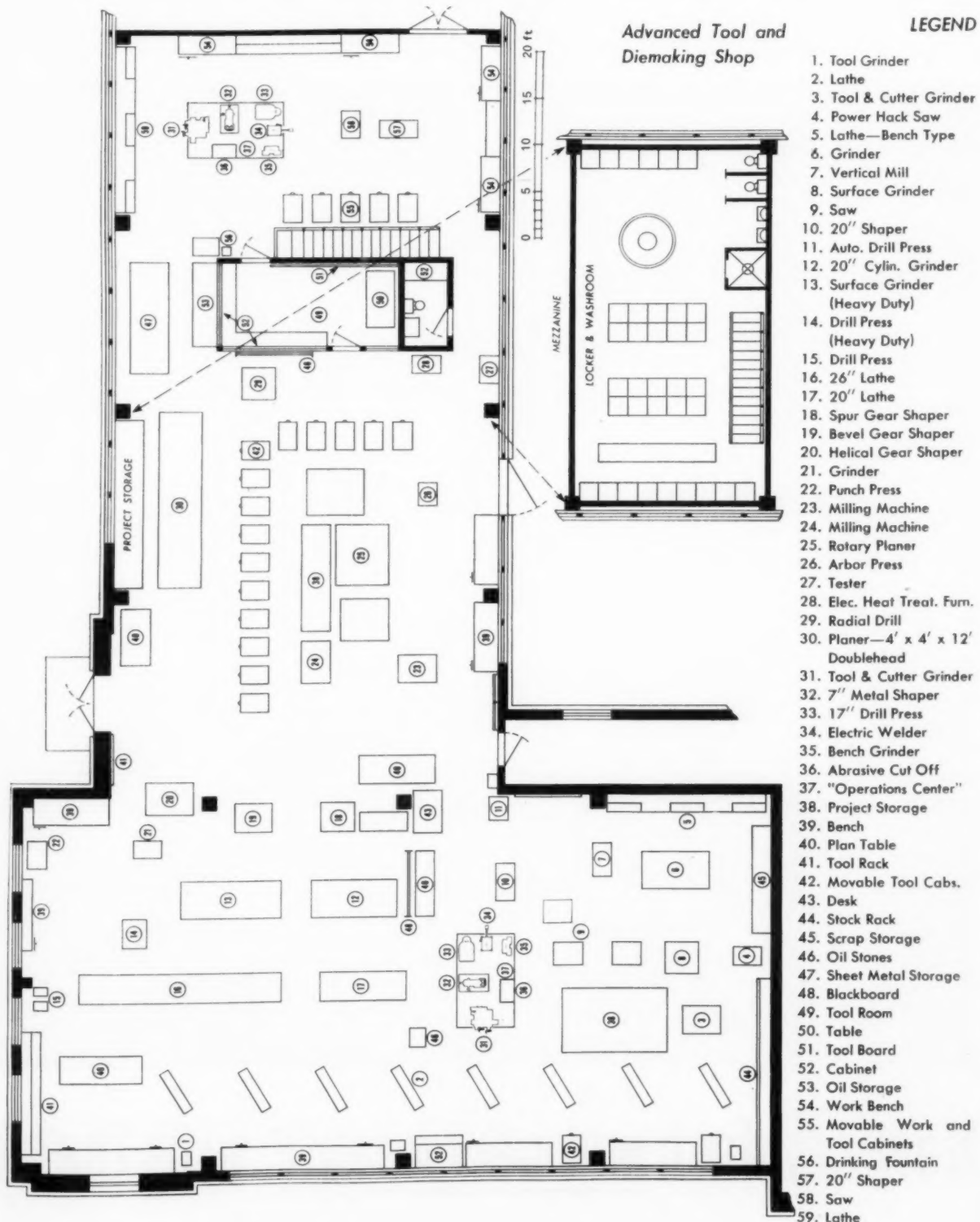
MIAMI WINDOW CORPORATION OF PANAMA, Box 923, Panama, R. P.

# SCHOOL SHOP PLANNING: 6

Special attention in this advanced tool and diemaking shop for a technical institute has been given to the sequence of operations and shop traffic, and to use of newer types of equipment. The shop provides for the teaching of tool and diemaking,

machine tool process and sheet metal work. There is space for 40 pupils, grades 13 and 14; without the last bay (top of plan as shown) the plan would serve for 30 pupils. Much of the equipment is movable: individual work tables, tool lockers, tool boards

and blackboards. An "operations center" is placed so that work from any station can be quickly moved to it. The designer was G. Edwin Shofner, Drawing & Design Dept. Head, Wm. R. Moore School of Technology, Memphis, Tenn.





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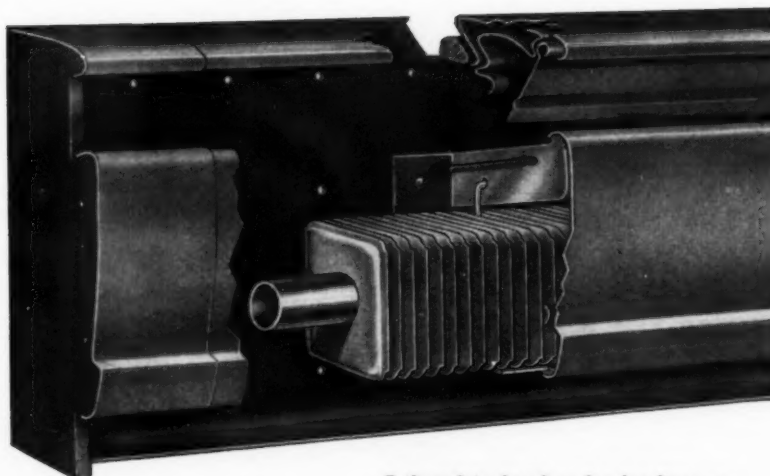
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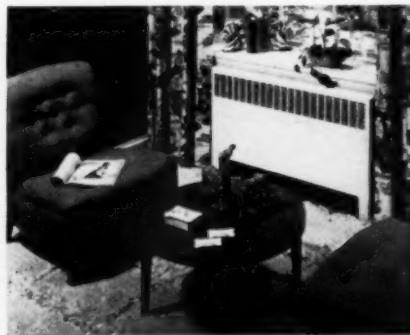
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## Architectural Engineering

### TRUCK TERMINALS

#### Part 1: Design Suggestions

(Continued from page 182)

down the center of the dock and work the freight outwards.

#### Communications Equipment

Good communications are a necessity in a modern terminal, requirements varying with the size and type of operation. Communications equipment can be used to summon personnel, speed the flow of documents, record pickup requests, transmit information between terminals, provide a central checking system and to signal fork truck operators.

Checking systems have an important effect on dock handling expense. From the time the freight is picked up until it is delivered, checking is the operator's protection against dishonesty and error.

A practical method of reducing checking expense while maintaining high efficiency is the central checking system using an intercommunications network.

The intercom network provides two-way voice communication between checkers working in the checking office and freight unloaders working in vehicles spotted at the dock. This network also incorporates a signalling system for calling fork truck operators to take away pallet loads.

The central (or master) station for each of the checkers has 10 positions which can be connected to any remote voice circuit. Voice circuits may be run to unloading doors, dispatchers scales, foremen and to other checkers.

One or more centrally located remote stations for the convenience of foremen are permanently connected at the switchboard with one central checking station. A number of remote, portable stations are provided from which unloaders can call the central checking office or signal the fork truck operator by a colored light, one for each unloading door.

The system operates generally as follows: A loader (dockman designated to load or unload) is assigned to a truck or trailer and carries with him a remote station assembly which he plugs into a receptacle at one of the columns. The remote station consists of a speaker-

(Continued on page 198)



# trouble-free service Roof Insulation!

"Insulite Roof Insulation was applied to our 2½ acre roof when this building was erected in 1930. After 23 years there is no evidence of failure; it remains firm and solid underfoot. To the best of our knowledge, it is still in excellent condition."

**E. E. Hedlund**  
Vice Pres. and Treasurer  
Northwestern Bank Building Co.

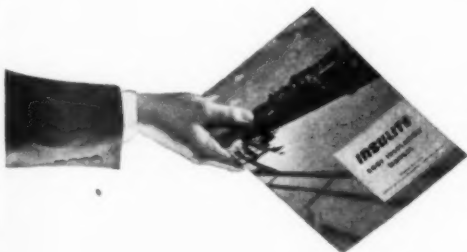
Build and insulate with double-duty

## INSULITE

Made of hardy Northern wood

INSULITE IS A REG. T.M., U.S. PAT. OFF.

INSULITE DIVISION, Minnesota and Ontario Paper Company  
Minneapolis 2, Minnesota



**The most complete book of its kind.**  
A valuable addition to your files. Contents include: (1) Coefficients of Heat Transmission and Thermal Resistance of Various Types of Flat Roofs Covered with Built-up Roofing, (2) Condensation Chart and (3) Fuel and Radiation Requirements Chart—plus product specifications and performance data. Write Insulite, Minneapolis 2, Minnesota for your free copy.



**1. Withstands Traffic.** See for yourself. Ask your Insulite sales representative for a sample. Then test it. See how strong and rigid it is. That's because Insulite, the original wood fiberboard insulation, is made only from hardy Northern wood fibers.



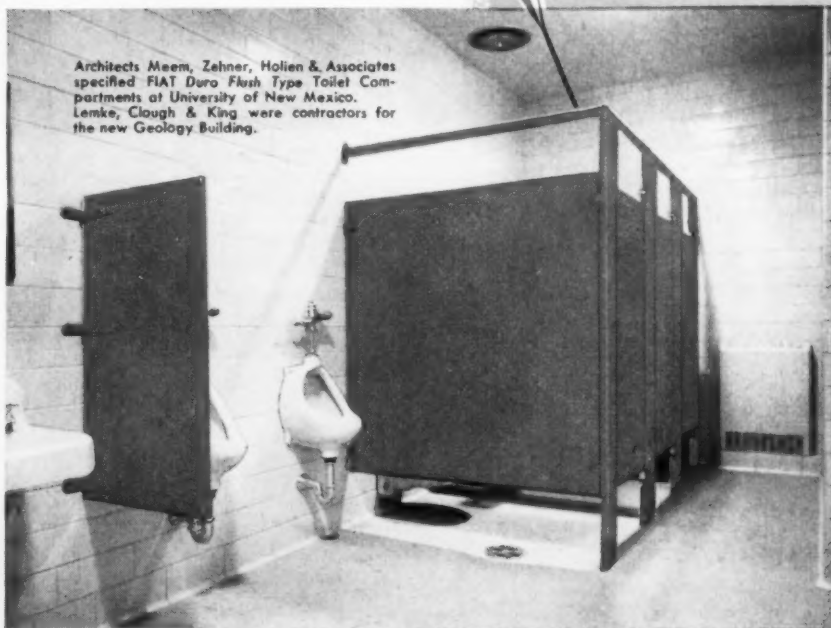
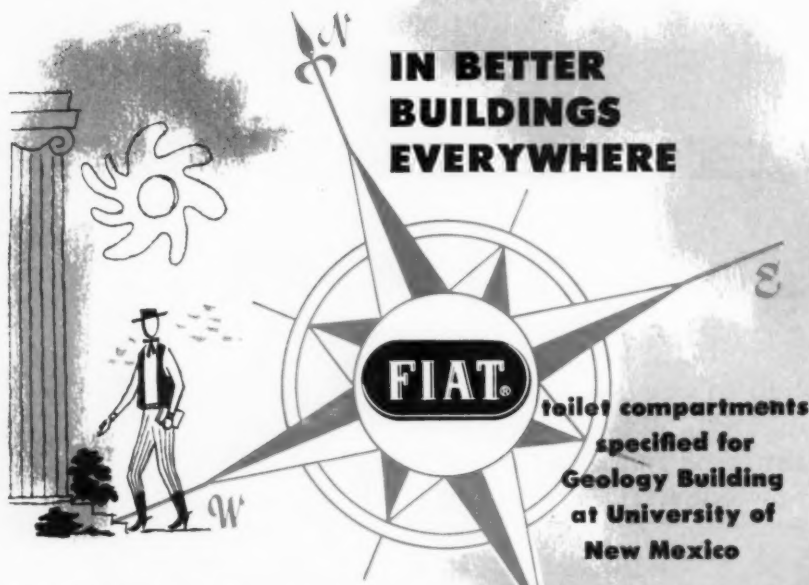
**2. Handles Without Breaking.** This is one of the big reasons roofers like Insulite Roof Insulation. The strong, rigid sheets are built to withstand the rough handling they are subjected to under actual job conditions! There's no fear of breakage.



**3. Cuts Cleanly and Easily.** Next time you're out on a job, see how quickly and easily the roofer cuts Insulite. If you have time, talk with him . . . chances are he'll tell you that cutting ease is one of the reasons he likes to work with Insulite.

Mr. E. E. Hedlund, Vice President and Treasurer, Northwestern Bank Building Co., and Mr. Stan Bull, Manager, Insulite Technical Service, inspect the roof of the Northwestern Bank Building, Minneapolis. After 23 years, Insulite Roof Insulation continues to give excellent service on this 92,000 sq. ft. roof.

Architects: Graham, Henderson, Probst & White—Chicago



Architects Meent, Zehner, Holien & Associates specified FIAT Duro Flush Type Toilet Compartments at University of New Mexico. Lemke, Clough & King were contractors for the new Geology Building.

When you specify  
**FIAT**  
you specify  
**QUALITY**  
**TOILET**  
**COMPARTMENTS**  
**DRESSING**  
**COMPARTMENTS**  
**HOSPITAL**  
**CUBICLES**  
Complete Catalog  
on request

The rugged construction of FIAT compartments and urinal screens, their durable finishes and easy-to-clean surfaces are important considerations in school and college installations. Exclusive features are incorporated in: (1) pilaster construction, the front and two edges being one piece of steel, making a smooth design, (2) theft-proof screws and (3) concealed type fastenings on all chrome-plated hardware parts. Panels, pilasters and doors are made of two sheets of heavy gauge stretcher leveled steel with fiber board sound deadener core cemented to the metal and interlocked under tension. Available in a selection of colors, all FIAT finishes are baked-on in two separate coats after the application of a rust-resistant prime coat. There is a FIAT representative in your area.

SEE SWEET'S **21b** **FI** ARCHITECTURAL



**FIAT METAL MANUFACTURING COMPANY**  
THREE COMPLETE PLANTS — ECONOMY • CONVENIENCE • SERVICE

Long Island City 1 New York  
Franklin Park, Ill. (Chicago Suburb)  
Los Angeles 63 California

In Canada: Porcelain and Metal Products, Ltd., Orillia, Ontario

## Architectural Engineering

### TRUCK TERMINALS

#### Part 1: Design Suggestions

(Continued from page 194)

microphone with control box and necessary cables.

The loader contacts a checker, and if there are more than one checker he may be assigned to any one of them through a switchboard arrangement. Contact with the checker is then broken, and the loader assembles the first shipment on a pallet, if he is unloading. He then calls the checker and reads off the number of packages and identification. The checker then gives the loader routing information. At this time the loader turns on a red signal light located above the door of the truck he is unloading and a fork truck operator comes to remove the pallet. As the fork truck operator leaves the truck, he turns the signal light off by a pull switch. The cycle is then repeated until the truck is unloaded.

The central checking office should be located conveniently to other dock and clerical functions, to make the flow of bills simple and direct. Pneumatic tubes may be included to transmit documents.

Central checking booths should be provided for each checker, designed for proper lighting and sound control.

**Loudspeakers.** On a small dock, an ordinary telephone installation is sufficient to locate employees and secure information. When the dock becomes large, either loudspeakers or some other call system should be used to summon personnel. Two-way speakers are recommended.

#### Dock Lighting

Illumination on the truck dock is required for the dock itself and for the interiors of truck and trailer bodies.

Overhead lighting on a dock should provide in the neighborhood of 15 foot-candles throughout the working area. Some daylighting may be provided.

Lighting requirements in the interiors of trucks and trailers, especially during unloading, are much higher than for the dock. Accuracy is important in reading labels and other markings. For this operation, floodlights should be installed on swivel joints and fixed to shine into a vehicle when it is backed up to the dock.

## ...in industrial siding

### DESCRIPTION:

**METAL THICKNESS:** .032" (22 U.S. Std. Ga.).

**FINISH:** Stipple-embossed.

**LENGTHS:** 5', 5½', 6', 6½' and so on to 13½'; also 13'10". Special lengths to order.

**WIDTH:** Over-all width 33½", nominal coverage 32".

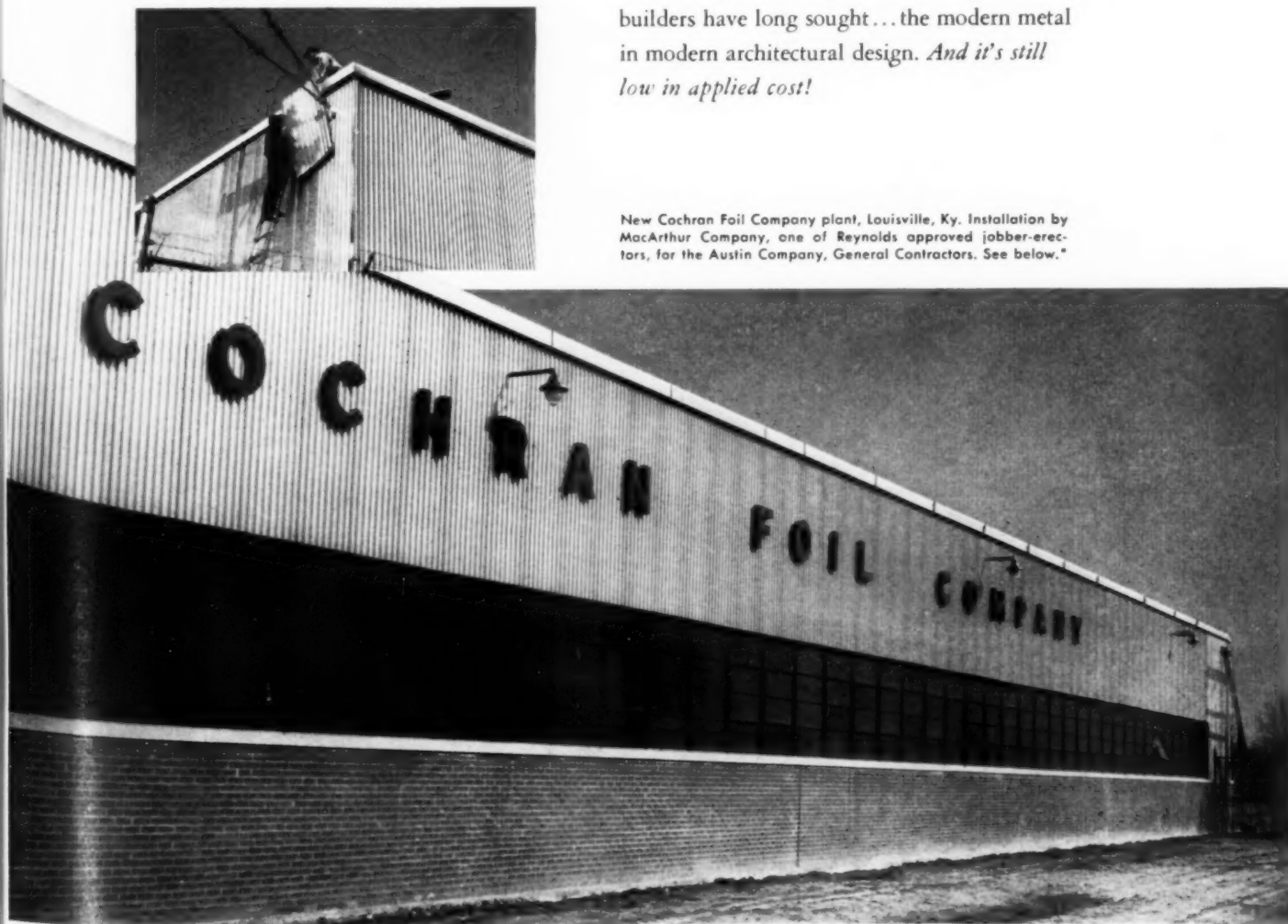
**RIBS:** Pitch 4" center to center, depth 1".

**WEIGHT:** 59 lbs. per 100 square feet.

### REYNOLDS *Lifetime* ALUMINUM RIBBED EMBOSSED SIDING

*New beauty, with the proved efficiency of .032" aluminum siding... freedom from rust, resistance to corrosion, lowest maintenance (no painting), and heat-reflectivity that cuts cooling costs in summer, fuel costs in winter. It's what industrial builders have long sought... the modern metal in modern architectural design. And it's still low in applied cost!*

New Cochran Foil Company plant, Louisville, Ky. Installation by MacArthur Company, one of Reynolds approved jobber-erectors, for the Austin Company, General Contractors. See below.\*



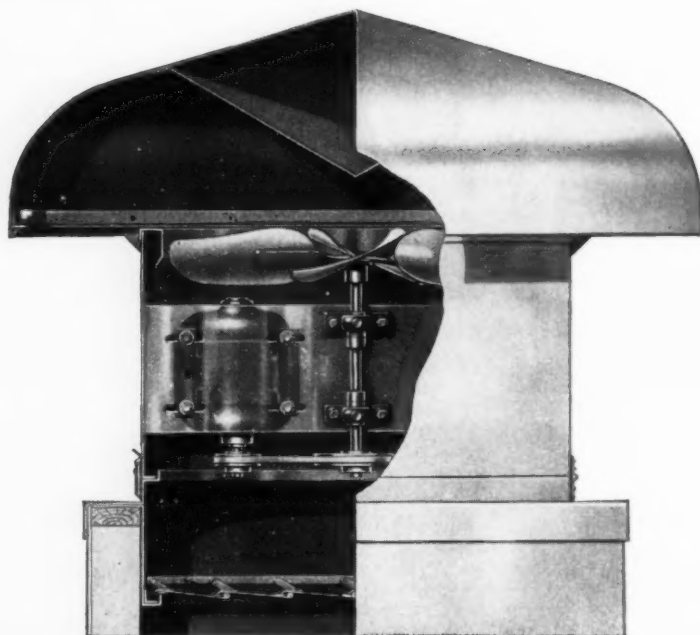
\*Comprehensive material and installation service now available through an approved jobber-erector system. For literature call the nearest Reynolds office listed under "Building Materials" in classified phone books of principal cities. Or write Reynolds Metals Company, Building Products Division, Louisville 1, Kentucky.

# BUILDING PRODUCTS





## GET ALL THE FACTS ABOUT THE HIGHLY EFFICIENT **BURT "LOW TYPE" FAN VENTILATOR**



Since its announcement a few years ago, the Burt "Low Type" has become one of the most popular ventilators for industrial and commercial use. The result of half a century of ventilating know-how, its features include:

### **MODERN ENGINEERING DESIGN**

Burt Engineers have combined high capacity, positive weather-proofing and high efficiency with economical operation.

### **INCONSPICUOUS IN USE**

Its low height and modern functional outline meet architectural and building management requirements for inconspicuous appearance.

### **EASILY INSTALLED AND SERVICED**

Airshaft base is designed to fit over a standard square curb with ample overhang for flashing. All internal parts are easily accessible for maintenance.

### **VERSATILE**

Operates with equal efficiency as an exhaust fan ventilator or as a fresh air supply unit—on direct or belt drive.

### **WIDE RANGE OF SIZES**

Available with fans from 12" to 60" in diameter—from 1/20 H.P. to 7 1/2 H.P.

**SEE SWEET'S OR WRITE FOR BULLETIN SPV-16**

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

# The Burt Manufacturing Company

48 East South Street, Akron 11, Ohio

## Architectural Engineering

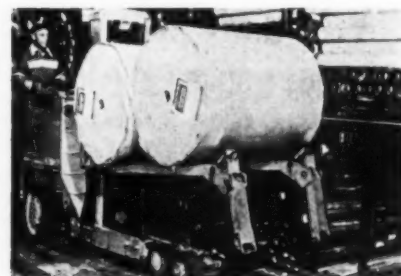
### PRODUCTS

(Continued from page 183)

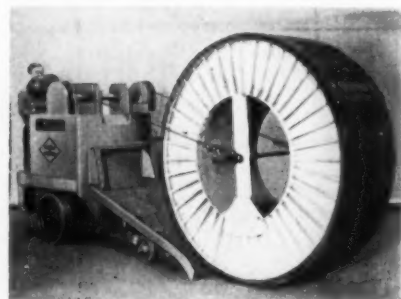
## INDUSTRIAL EQUIPMENT

### MATERIALS HANDLING

THREE FORK TRUCKS for special purposes are part of the large, versatile line available from Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio



▲ **PLATFORM TRUCK** equipped with fork arms is used for transporting rolls of paper from warehouse to printing presses. It carries two rolls at a time, cutting handling time, and helps position rolls at feed end of press



▲ **REEL HANDLING** truck is equipped with a rocking platform and a powered winch. Models available for handling reels weighing 6000, 10,000, 12,000, and 20,000 lb in various diameters. Power or hand-wheel steering available



▲ **LOAD-STABILIZER**, an hydraulic-powered attachment for fork trucks with capacities up to 6000 lb, is designed for safe transport of unstable and semi-stable loads. Also allows stacking at great heights with maximum safety

(Continued on page 206)

all 227 cooperative apartments in 17 days . . .

and a complete General Electric Kitchen Exhibit



**ALL THE UTILITY**, wall and base cabinets harmonize with G-E appliances. General Electric custom sink center has Textolite® Monotop. The G-E Kitchen Exhibit helped to sell many an apartment.



One of the inviting entrances to Franconia Village Apartments.

**"WE SIMPLY OFFERED PROSPECTS MORE"**

Berkel Associates report: "All of us agreed from the very beginning that the General Electric Kitchen was a *most important* factor in our over-all sales strategy. We wanted to offer people *more* for their dollar. General Electric certainly helped us to sell our entire cooperative in record time."

**BERKEL ASSOCIATES.** (Builders) From left to right: Messrs. Daniel Berley, Samuel N. Berley, Robert Katz, Lee E. Ellman.

## THINGS TO LOOK FOR WHEN YOU BUY FLOOR PLATE



### LOOK at the Raised Pattern!

All steel floor plates have raised figures. Only one—A. W. SUPER-DIAMOND—has the safety pattern you see here. Note the over-all pattern of clear-cut diamond treads. It means real foot-safety, first requisite in floor plate.



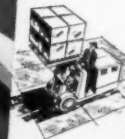
### LOOK at the Protection!

SUPER-DIAMOND puts 40 diamond treads in every footstep—40 traction points to keep feet safe and secure. Every SUPER-DIAMOND grips hard for maximum skid-resistance, regardless of the angle of approach.



### LOOK at the Savings!

First cost is low and so is maintenance—with A. W. SUPER-DIAMOND. The over-all SUPER-DIAMOND pattern permits cutting with minimum waste—provides perfect matching end-to-end or side-by-side. And SUPER-DIAMOND needs no maintenance other than cleaning.



### LOOK at the Service!

SUPER-DIAMOND installations are permanent. Years of abuse won't wear out this tough, rolled steel floor plate. It withstands hard blows and heavy loads without cracking or breaking. And it's resistant to oil, heat and fire.



### LOOK at the Easy Cleaning!

SUPER-DIAMOND'S exclusive pattern means no cracks or joints to hold dirt. The surface is easily cleaned with broom, mop or hose—dries fast after washing—can be painted if you so desire.

For safety with economy on factory floors, ramps, trench covers, walkways, get full information about

A. W. SUPER-DIAMOND Rolled Steel Floor Plate. We'll be glad to send you complete technical data and suggestions for use. Simply clip and mail the handy coupon.



### A.W. SUPER-DIAMOND

ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY  
CONSHOHOCKEN, PENNA.

Please send me Booklet SD-59 on A. W. SUPER-DIAMOND.

Name .....  
Title .....  
Company .....  
Address .....  
City ..... Zone ..... State .....

Other products: A. W. ALGRIP Abrasive Rolled Steel Floor Plate • Plates • Sheets • Strip (Alloy and Special Grades).



## Architectural Engineering

### PRODUCTS

(Continued from page 202)

## INDUSTRIAL EQUIPMENT

### MATERIALS HANDLING



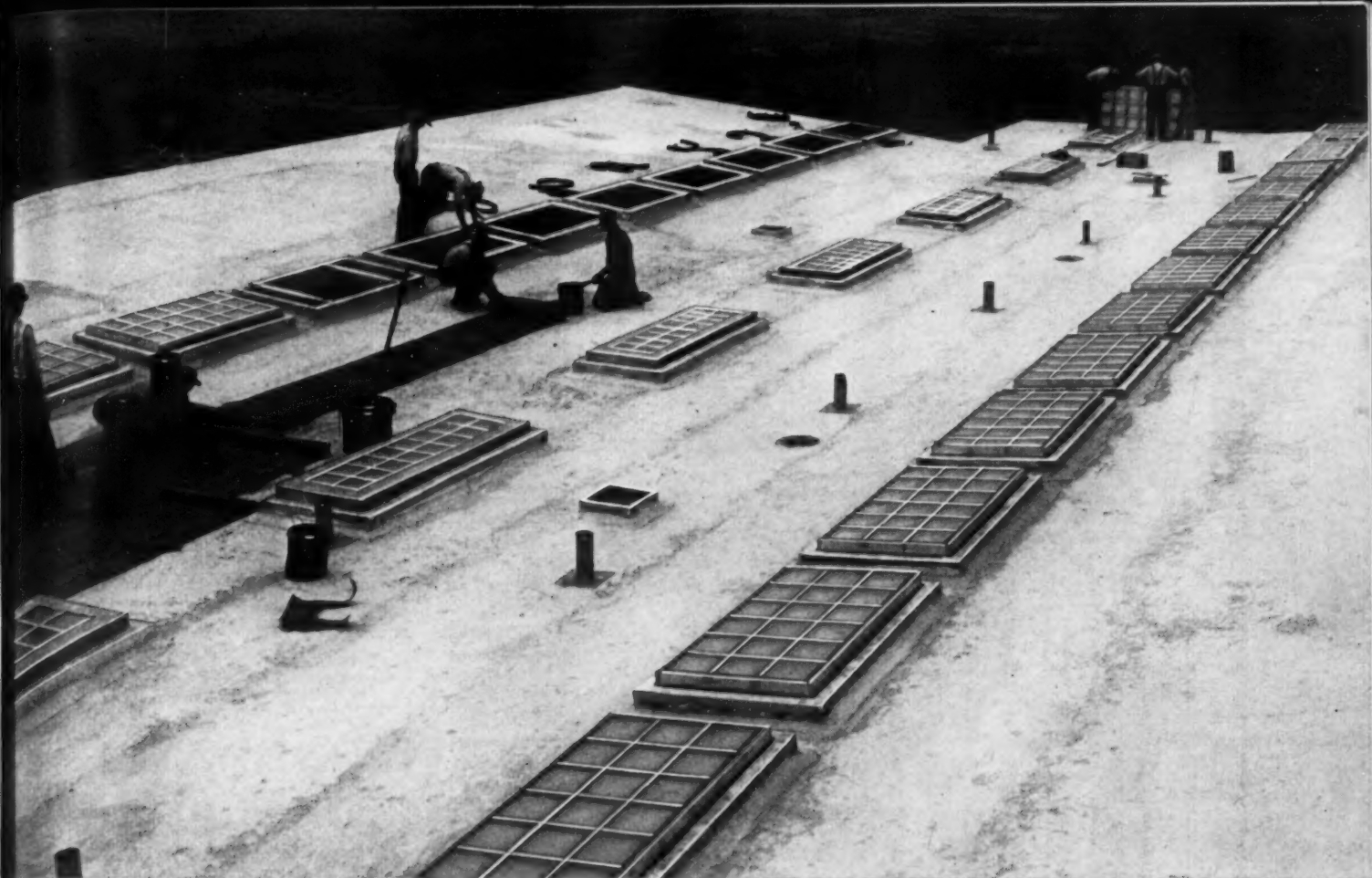
FUEL ECONOMY, smooth acceleration, easy maintenance, safety and convenience are cited as features of new "Gas-O-Matic" truck which has new transmission system requiring neither a clutch nor gear shift. Power system is a gasoline engine, an electric motor and a variable voltage generator. The generator is connected with the engine to the drive shaft and acts as a booster for the drive motor. Speed is controlled by foot pressure on accelerator. Baker-Raulang Co., 1230 W. 80th St., Cleveland 2, Ohio, Baker Industrial Truck Division



RIDGED AND CROSS-CUT rubber surface provides extra gripping power for operation of conveyor belt on grades as steep as 55 deg. Parallel ridges are 1/4 in. high and cross cut to form over 5700 tiny gripping blocks per sq ft. Called "Ribflex Griptop," the package belt is self-cleaning, permits floor space savings and shorter belt lengths. B. F. Goodrich Co., Akron, Ohio

(Continued on page 210)



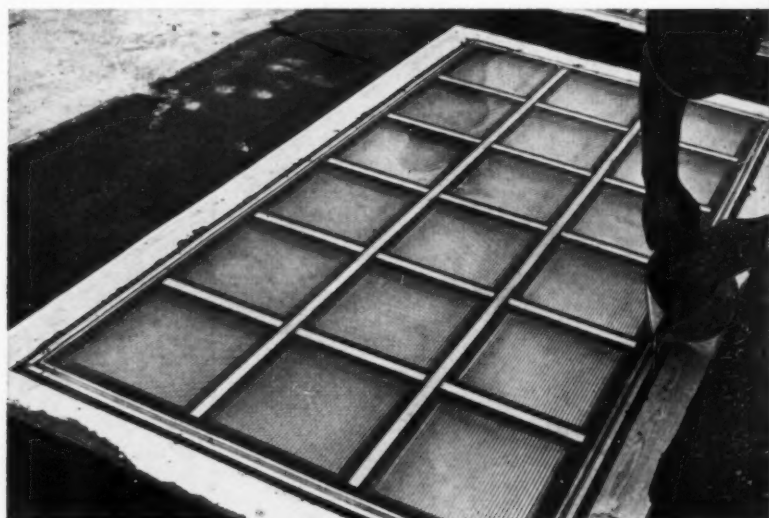


The new Middleville School, Middleville, Michigan, was designed by the architectural firm of Louis Kingscott & Associates, Kalamazoo, Michigan. It is the first school completed that uses a combination of Kimble Toplite Roof Panels and Insulux

Light-Directing Glass Block panels. Here is a construction photograph of the roof of this new school. The Toplite Panels in left and right rows are in classroom areas. Center panels are overhead in corridor. (See sketches lower left).



Factory fabrication means uniform quality and low job-installation cost. Panels are set on prepared curbs. Left, above, marine-spun oakum is forced into the expansion space between Toplite Panel and curb. Next, right above, Vault-Light cement is poured



in stages between Toplite Panel and curb. Cement is fast-setting and serves as a seal. Below left, worker trowels on asphaltic compound in preparation for laying of fabric membrane flashing material. Note roofing material is brought to top of curb.

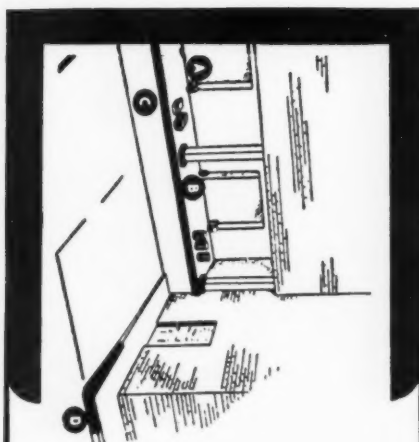


The complete story of this great new advance in efficient utilization of *free* daylight is available in the bulletin: "Kimble Toplite—a new system in daylighting." Send for your free copy today. Address Kimble Glass Company, Dept. AR-8, Box 1035, Toledo 1, Ohio.



**KIMBLE GLASS COMPANY**

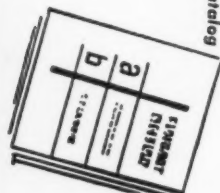
Toledo 1, Ohio—Subsidiary of Owens-Illinois Glass Company



**For the perfect protection of platform faces and other surfaces exposed to impact and abrasion, Armored Concrete is the only answer.**

Armored Concrete for column guards (A-B) for loading platforms (C) for all forms of curbing (D).  
Cast iron—the only perfect protection of concrete against  
1. Abrasion 2. Impact 3. Corrosion.  
Flockhart method of anchorage takes the cast iron completely out of tension.

Ten Year Guarantee on Armored Concrete



Write for  
free descriptive  
catalog

Gentlemen:  
Please send me Flockhart Catalog No. 139.

name.....

co. name.....

st. and no.....

city, state.....

**FLOCKHART FOUNDRY CO.**

84 POLK ST., NEWARK 5, N. J.

## Architectural Engineering

### PRODUCTS

(Continued from page 206)

### INDUSTRIAL EQUIPMENT

### MATERIALS HANDLING



FLEXIBLE "ASSEMBLE-IT-YOURSELF" general purpose trucks by Leebaw can be altered to meet changing needs. Shipped knocked down, they can be put together in five minutes, disassembled for storage, reassembled as desired. All parts are replaceable and interchangeable without fastenings. Trucks are of all-steel welded construction. Leebaw Mfg. Co., 65 Wayne Ave., Youngstown 2, Ohio.



COMBINATION HAND TRUCK—STEP LADDER by Fairbank. serves dual purpose, helps save time and energy. Especially valuable in plant stockrooms and warehouses, since it permits merchandise to be delivered to bins and then stocked in bins beyond reach, all in a single operation with the same equipment. Special design features include curved crossbars, solid nose plate. Fairbanks Co., 393-399 Lafayette, New York, N. Y.

(Continued on page 214)



#### ALABAMA

Badham Insulation Co., Inc., Birmingham  
Stokes Interiors, Inc., Mobile

#### ARIZONA

Fiberglas Engineering & Supply Co.,  
Phoenix  
Hall Insulation & Tile Co., Tucson

#### ARKANSAS

National Builders' Supply, Inc.,  
Little Rock

#### CALIFORNIA

Coast Insulating Products,  
Los Angeles and San Diego  
Cramer Acoustics, San Francisco and  
Fresno

#### COLORADO

Construction Specialties Co., Denver

#### CONNECTICUT

W. T. Roberts Construction Co.,  
East Hartford

#### DISTRICT OF COLUMBIA

Kane Acoustical Co., Washington

#### GEORGIA

Dumas and Searl, Inc., Atlanta

#### ILLINOIS

General Acoustics Co., Chicago

#### INDIANA

The Baldus Co., Inc., Fort Wayne  
E. F. Marburger & Son, Inc., Indianapolis

#### IOWA

Kelley Asbestos Products Co., Sioux City

#### KANSAS

Kelley Asbestos Products Co., Wichita

#### KENTUCKY

Atlas Plaster & Supply Co., Louisville

#### MARYLAND

Lloyd E. Mitchell, Inc., Baltimore

#### MASSACHUSETTS

W. T. Roberts Construction Co.,  
Cambridge

#### MINNESOTA

Dale Tile Company, Minneapolis

#### MISSISSIPPI

Stokes Interiors, Inc., Jackson

#### MISSOURI

Kelley Asbestos Products Co.,  
Kansas City  
Hamilton Company, Inc., St. Louis

#### NEBRASKA

Kelley Asbestos Products Co., Omaha

#### NEW JERSEY

Kane Acoustical Co., Fairview

#### NEW MEXICO

Fiberglas Engineering & Supply Co.,  
Albuquerque

#### NEW YORK

Robert J. Harder, Inc., Lynbrook, L. I.  
James A. Phillips, Inc., New York  
Davis-Fetch & Co., Inc., Buffalo,  
Rochester and Jamestown  
Davis Acoustical Corp., Albany

#### NORTH CAROLINA

Bost Building Equipment Co., Charlotte

#### OKLAHOMA

Harold C. Parker & Co., Inc.,  
Oklahoma City  
Kelley Asbestos Products Co., Tulsa

#### OHIO

The Mid-West Acoustical & Supply Co.,  
Cleveland, Akron, Columbus, Dayton,  
Springfield and Toledo

#### OREGON

Acoustics Northwest, Inc., Portland  
R. L. Elfstrom Co., Salem

#### PENNSYLVANIA

General Interiors Corporation, Pittsburgh  
Jones Sound Conditioning, Inc., Ardmore

#### TENNESSEE

John Beretta Tile Co., Inc., Knoxville  
John A. Denie's Sons Co., Memphis  
The Workman Co., Inc., Nashville

#### TEXAS

Blue Diamond Company, Dallas  
Otis Massey Co., Ltd., Houston  
Builder's Service Co., Fort Worth

#### UTAH

Utah Pioneer Corporation, Salt Lake City

#### VIRGINIA

Manson-Smith Co., Inc., Richmond

#### WASHINGTON

Elliott Bay Lumber Co., Seattle

#### WISCONSIN

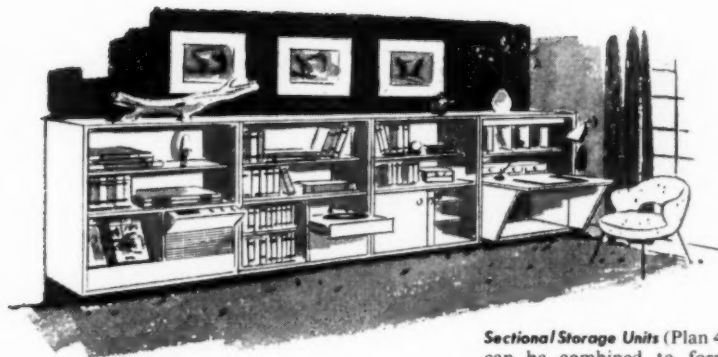
Building Service, Inc., Milwaukee

#### CANADA

Albion Lumber & Millwork Co., Ltd.  
Vancouver, B. C.  
Hancock Lumber Limited,  
Edmonton, Alberta

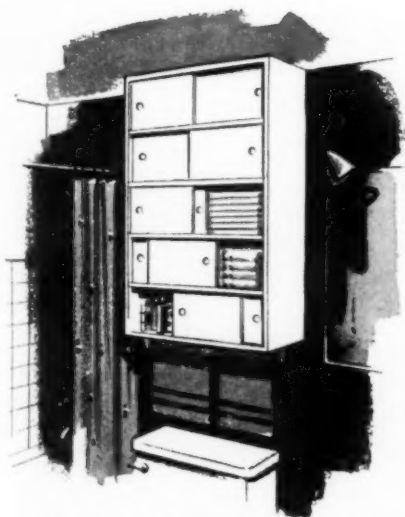


**Shelf-Door Wardrobe** (Plan 3) combines features of roomy closet, dresser and chest of drawers. Use it to help sell your house faster. Can be used in any room. Build it with fir plywood for only.....**\$55\***

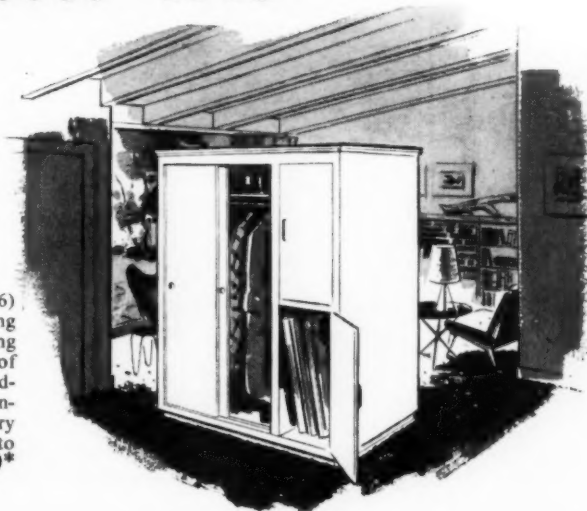


**Sectional Storage Units** (Plan 4) can be combined to form shoulder-high storage wall for living room or den. Sections can be pre-built, installed on job. Fir plywood to build it costs.....**\$90\***

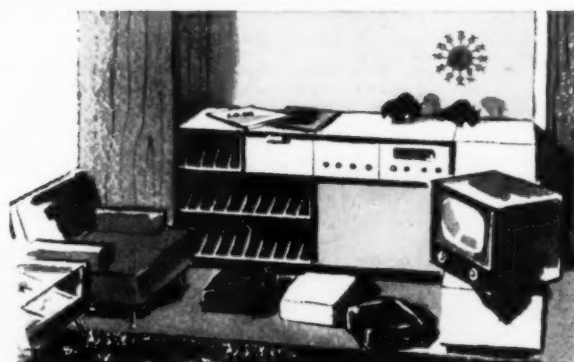
# *sales-appeal in your homes fir plywood built-ins*



**Odds and Ends Cabinet** (Plan 7) appeals to women customers. Use it to reclaim waste space above water closet or hang in kitchen or utility room for extra storage. Get fir plywood to build it for only.....**\$8\***



**Island Entry Wall** (Plan 6) defines entry and living areas without confining either. Adds feeling of spaciousness. Saves building costs by replacing conventional wall and entry closet. Fir plywood to build it costs....**\$100\***



**Music and TV Center** (Plan 14) offers a real sales feature for music lovers. TV on turntable can be turned for convenient viewing. Main unit holds radio, record player and record storage. Fir plywood to build it costs about.....**\$60\***

\*Based on latest available Chicago retail sales for fir plywood compiled by leading trade magazine; prices may vary throughout nation depending upon location and source of supply



## PRODUCTS

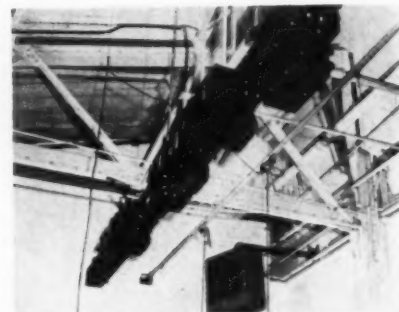
(Continued from page 210)

### INDUSTRIAL EQUIPMENT PRODUCTION AIDS

INDUSTRIAL DISPENSERS for production lines provide automatic steady flow of parts plus interim storage. As each tray of parts is emptied, another automatically moves up to take its place, thus reducing handling and storage problems. The



units are called "AMF Industrial Lowerator Dispensers." Most important advantage cited by the manufacturer is pre-positioning of material on one level, eliminating necessity for operator to bend or move from work position. American Machine & Foundry Co., 511 Fifth Ave., New York, N. Y.



FLEXIBLE ELECTRICAL DISTRIBUTION is provided by "National Electric .PI (industrial plug-in) Busway Systems," for distribution of power to production machines. The busway permits alteration of production facilities without interrupting operation, since machines can be plugged in, disconnected or relocated without shutting down entire line. The system itself can be extended or relocated as production requirements change, with minimum effort and maximum reutilization of original installation. National Electric Products Corporation, Chamber of Commerce Bldg., Pittsburgh 19, Pa.

Perfect for that new hotel...

**Amtico** America's most beautiful  
rubber flooring!



AMERICAN BILTRITE

RUBBER COMPANY  
TRENTON 2, NEW JERSEY

In Canada—American Biltrite Rubber Co. (Canada) Ltd., Sherbrooke, Quebec

Affiliates... Biltrite Rubber Company, Chelsea 50, Mass. • American Tile & Rubber Co., Trenton 2, N. J. • Panther-Panco Rubber Co., Chelsea, Mass. • American Tile & Rubber Co. (Canada) Ltd., Sherbrooke, Quebec • Panther Rubber Co., Ltd., Sherbrooke, Quebec, Canada.

Also makers of Biltrite NURON for Shoe Soles, Luggage and Accessories—and Biltrite Rubber Heels

26 COLOR SAMPLE KIT...YOURS ON REQUEST

AMTICO, Dept. AR-14, Trenton 2, New Jersey

Gentlemen:

Please send me free box of 4" x 4" samples of Amtico Flooring in standard 1/8" gauge and all 26 stock colors—also illustrated literature.

NAME.....

FIRM.....

ADDRESS.....

CITY.....STATE.....

(Please attach coupon to your business card or letterhead)



**Amtico**  
RUBBER FLOORING

### CONTROL & REGULATION



INDICATING CONTROLLER, new "Wheelco Capacitrol" Model 221C couples anticipating action with "electronic link" between measuring and control systems to provide unvarying "straight line" process heat control. The unit anticipates approach and departure of temperatures caused by heat transfer lags and load requirements. Four other models also available in the "200" series, both for regular on-off and proportioning control. Wheelco Instruments Div., Barber-Coleman Co., Rockford, Ill.

(Continued on page 218)



SHOWN AT LEFT is American-Standard Lucerne vitreous china lavatory with the Zurn System fitting for this particular wall-type fixture.

## This Combination

simplifies rest room planning  
...insures against untimely obsolescence!

## AMERICAN-Standard off-the-floor plumbing fixtures

INSTALLED WITH THE

**ZURN** system\*

● Planning rest rooms around completely bare floors permits greater latitude of design. Enables you to lower ceilings. Gives you more usable floor space. And widens your choice of floor and wall construction.

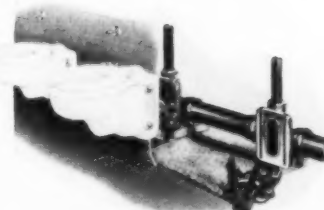
But just as important to you and the builder is the fact that by specifying wall type fixtures for installation with Zurn systems, you make rest rooms look larger and more modern. And, because floors that are free of obstructions are easier to clean and maintain, your rest rooms retain their newness years longer.

\*T. M. Reg. U. S. Pat. Off.

A good example of the pleasing effect of spaciousness achieved with American-Standard plumbing fixtures installed and supported by the Zurn System is shown in the large picture above. This is one of the modern rest rooms in the new Lever Brothers plant in Los Angeles, designed and constructed by the Bechtel Corporation.

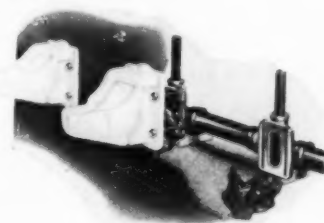
American Radiator & Standard Sanitary Corp.  
Pittsburgh, Pennsylvania

J. A. Zurn Mfg. Co.,  
Plumbing Division, Erie, Pa.



ABOVE: American-Standard Glenco toilets installed with Zurn Systems relieve the wall of all the load.

BELOW: Wall-type model of the famous Sanistand fixture—the American-Standard urinal for women. It is installed with a Zurn System fitting especially designed for this fixture.



### SEND FOR THESE FREE BOOKLETS

Fill in and mail the coupon for these two helpful booklets. They contain up-to-date information for planning modern rest rooms that stay modern. They tell you how you can save your client money on construction material, time and labor.



American-Standard  
Dept. AR-83, Pittsburgh 30, Pa.

Please send me the 2 booklets: "BETTER REST ROOM GUIDE" and  
"YOU CAN BUILD IT FOR LESS A NEW WAY."

Name..... Title.....

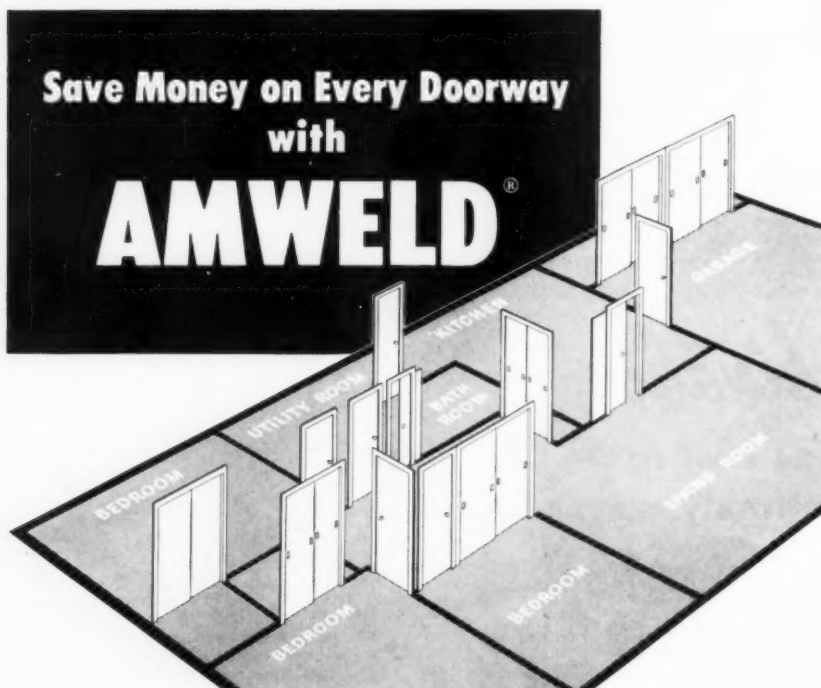
Company.....

Street..... City..... State.....

## PRODUCTS

(Continued from page 214)

### INDUSTRIAL EQUIPMENT CONTROL & REGULATION



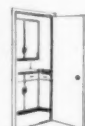
Here is a line of quality products so attractive, so neat and trim in appearance that you can specify them in expensive homes and apartments. Yet their low installed cost which is usually less than hand-fitted types is a way to cut costs in moderately priced homes.

For complete information about the AMWELD® steel doors, frames and sliding closet door units, write us today.



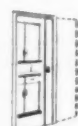
**AMWELD®**  
STEEL SLIDING  
CLOSET DOOR  
AND FRAME  
UNITS

Choice of "K-D" or assembled frame units—sizes 3', 4', 5' and 6' wide openings—6'9½" high.



**AMWELD®**  
INTERIOR  
STEEL DOORS  
AND FRAMES

Choice of "K-D" Inter-Lok steel frames or factory assembled and welded. Doors primed with grey baked-on enamel and available in all standard sizes.



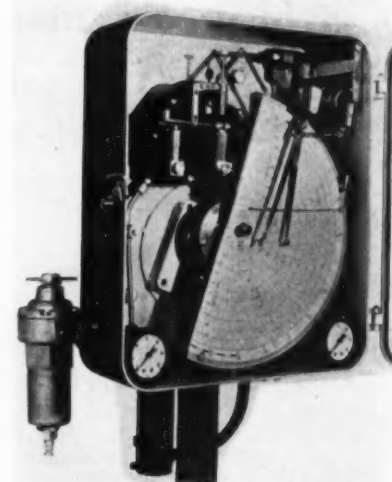
**AMWELD®**  
SLIDE-AWAY  
STEEL POCKET  
DOOR AND  
FRAME UNIT

Frame and doors in two sizes—2'6" and 2'8" widths. 1½" thick, standard 6'8" height.



AMWELD BUILDING PRODUCTS DIVISION  
**THE AMERICAN WELDING & MANUFACTURING CO.**  
340 DIETZ ROAD • WARREN, OHIO

DIFFERENTIAL PRESSURE primary element transmitter for use in automatic control systems, the "Swartwout Type D2T Autronic" is used in conjunction with the manufacturer's "Autronic Control System." Installed at the point of measurement, the unit transmits an electric signal which is directly proportional to the variable being measured. Response is described as instantaneous, since the control system is all-electronic, eliminating electric motors, slide wires and other contacting mechanisms. There are also no air lines which might leak, corrode, freeze or cause other maintenance problems. Compact unit is 13 in. long, 6½ in. high and 5½ in. deep. Net weight is 26 lb. The Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio



DIFFERENTIAL CONTROLLER for change-over valves, new "Rockwell" unit is designed for orifice meter measuring stations where a wide variety of flow conditions is encountered, helps obtain accurate measurement where there is a considerable variation in flow. The device offers an easy, positive and economical means of automatically turning an additional measuring unit into a line when needed, and shutting it off completely when not needed. Size of installation and housing is small. Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.

(Continued on page 222)



# PC Glass Blocks have given us superior daylighting everywhere in the building,"

says **V. V. Moulton**, *President, Auto-Owners Insurance Company, Lansing, Michigan.*

"My architect had three reasons for recommending PC Glass Blocks. He said they would give us superior daylighting, lower heating and cooling costs and low maintenance. After two years in this building, we know he was right on every point," Mr. Moulton said.

"These prismatic blocks gather the light and throw it well into the office spaces. Our heating and cooling costs are lower than we would ordinarily expect. And the glass block panels do not require any costly painting, re-puttying or cleaning."

Some of the most important buildings in America

are being erected with large, light-giving panels of PC Functional Glass Blocks, because these blocks *do things to daylight*. They transform a blinding shaft of sunlight into useful, diffused illumination that is easy on the eyes. They also provide significant savings on heating, cooling and window maintenance costs.

There are hundreds of ways PC Glass Blocks can enhance the appearance and the comfort of a building. Plan now to make them a part of your next design. Get complete data on PC Glass Blocks by consulting Sweet's Architectural File, or by writing direct to us.

## Pittsburgh Corning Corporation

PITTSBURGH 22, PA.

### Here's what you get with PC Glass Blocks

**BETTER DAYLIGHTING**—Functional patterns direct daylight to reflective ceiling, or distribute it uniformly throughout the room. More light, less glare.

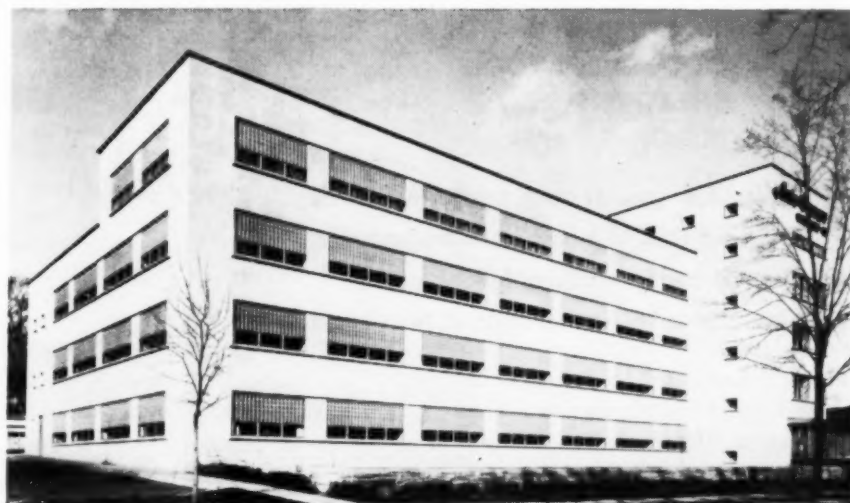
**REDUCED HEATING & COOLING COSTS**—Glass block panels have insulating efficiency of solid 8-inch masonry wall.

**LOWER WINDOW MAINTENANCE COSTS**—Glass block panels seldom have to be washed. Breakage is rare. There is nothing to paint.

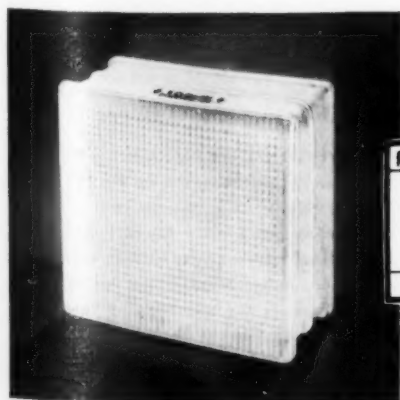
**NO "EXTRA" EXPENSE**—Unlike conventional windows, panels of PC Functional Glass Blocks seldom if ever need expensive shades, blinds or louvres.

**NO DIRT INFILTRATION**—A glass block panel is an integral part of your building wall. Tight mortar joints seal out moisture, dirt.

**LESS OUTSIDE NOISE**—PC Glass Blocks are hollow. The internal dead air spaces reduce sound transmission.



Architect: Lee Black and Kenneth Black, A.I.A., Lansing, Michigan • Contractor: The Christman Company, Lansing, Michigan



Pittsburgh Corning Corporation  
Dept. C-83  
One Gateway Center  
Pittsburgh 22, Pa.

Without obligation on my part, please send me your FREE booklet on the use of PC Glass Blocks in public, commercial and industrial structures.

Name ..... Title .....

Firm .....

Address .....

City ..... Zone..... State.....

# INSULATE AS YOU BUILD ...WITH FIR-TEX SHEATHING



## CONSIDER THESE ADVANTAGES

AS COMPARED WITH  
OUTMODDED WOOD  
SHEATHING AND  
BUILDING PAPER

- ① Seals home against heat, cold, wind and dust.
- ② Shuts out rain. It is asphalt impregnated.
- ③ Goes up easily—reduces labor costs.
- ④ Strengthens bracing strength of the structure.

Fir-Tex Asphalt Impregnated Insulating Sheathing is available at most lumber supply dealers. Specify Fir-Tex Sheathing. Get a building board plus insulation at the cost of insulation alone.



All Fir-Tex Insulating  
Board products are  
termite proof.

### FIR-TEX

Exclusive Sales Distributors  
DANT & RUSSELL, INC.  
Portland, Oregon

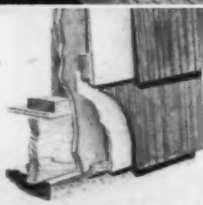


#### INTERIOR FINISH

For adding that extra room within the home, for finishing the attic or basement, for all remodeling jobs—recommend Fir-Tex Color Panels and Tile. It insulates as it builds; is easy to use. Fits in ideally with the spectacular present-day "do it yourself" trend.

#### BACKER BOARD

Fir-Tex Backer Board eliminates the slow, time consuming job of undercourse shingling and building paper application. It adds insulation, cuts building costs, gives a smoother, neater appearance. Adds beauty with uniform, deep shadow lines...and is asphalt impregnated.



## Architectural Engineering

### PRODUCTS

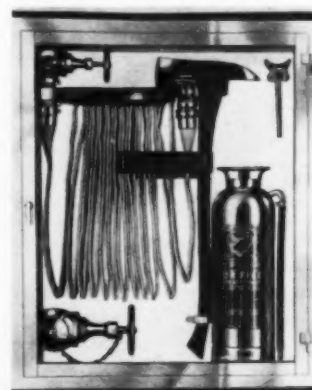
(Continued from page 218)

## INDUSTRIAL EQUIPMENT

## HEALTH & SAFETY



PLASTIC AISLE MARKER in bright red permits permanent marking-off of special smoking or danger areas in plants, warehouses and other installations. Available also in yellow and white, the "Dur-O-Line" markers are intended to take the place of painted lines. They can be put down on any type floor and remain bright for years. Traffic Safety Supply Co., 27th and Sandy Blvd., Portland, Ore.



COMPLETE FIRE PROTECTION PACKAGE in a wall cabinet includes a 1½-in. angle valve with 75 ft of 1½-in. unlined linen hose mounted on a one-piece rack and equipped with a fog nozzle. Also included in "Elkhart" package are a 2½-in. valve, 2½-gal. 500-lb. tested brass drawn shell fire extinguisher, fireman's axe and spanner wrench. Door and trim of cabinet can be installed after plastering. Elkhart Brass Mfg. Co., Elkhart, Ind.

(Continued on page 226)



First Award—best single issue—October 1950 issue featuring "Mental Hospitals and Schools."



Certificate of Excellence—outstanding graphic presentation—October 1951 issue.



Certificate of Excellence—outstanding graphic presentation—May 1952 issue.

# for Editorial Excellence

*confirm the judgment of readers and advertisers*

Nine of these 22 editorial awards have come to Architectural Record in the past two years . . . including seven awards in Industrial Marketing's Annual Business Paper Editorial Achievement Competition.

No magazine has ever duplicated the Record's record of two first awards and five awards of merit in two consecutive years in Industrial Marketing's fourteen-year-old business paper editorial competition.

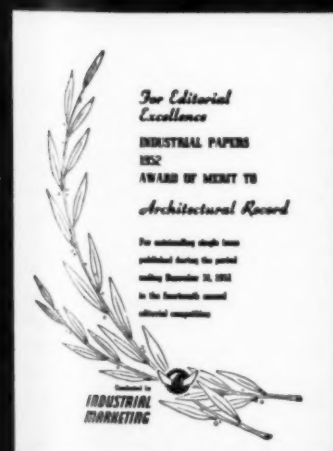
These many editorial awards strongly confirm the judgment of . . .

• Architects and engineers who have steadily voted Architectural Record their preferred magazine in 45

out of 51 readership studies sponsored by building product manufacturers and agencies (including all eleven surveys since January 1952) and . . .

• Advertisers of building products who year after year place more pages of advertising in Architectural Record than in any other architectural magazine—over 50% more pages in 1952 and thus far in 1953!

Put the workbook of architects and engineers to work for your sales force now. You'll reach more architects—at the lowest cost per page per thousand. And your coverage of over 85% of all architect-engineer-designed building is documented by Dodge Reports.



Award of Merit—outstanding single issue—the June 1951 issue featuring "Schools and School Practice."



Award of Merit—outstanding original research—"Next Year's Boom Will Be Different," November 1950.

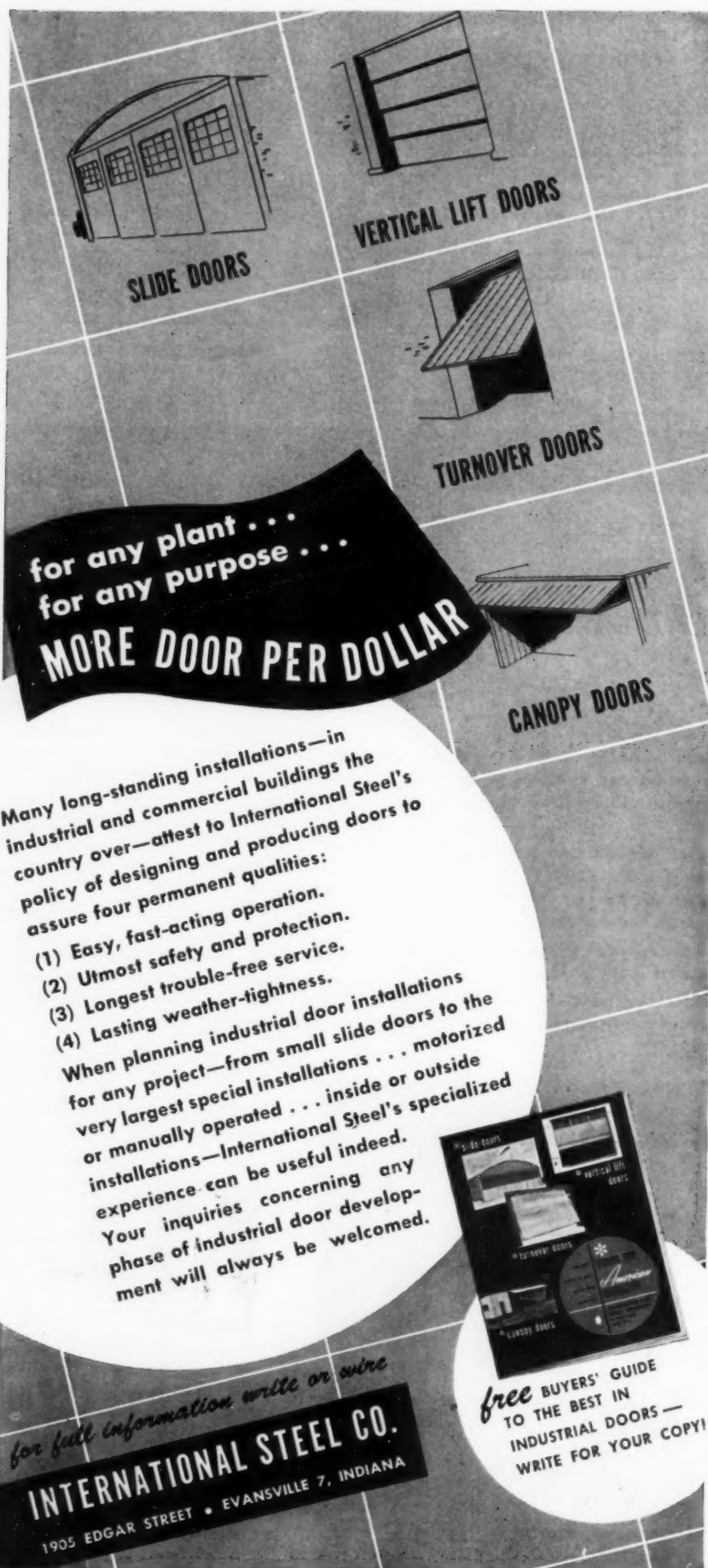


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New York 18, N. Y.  
LOngacre 3-0700

**Architectural Record** "workbook of the active architect and engineer"

\*1952: Architectural Record, 2,817 pages; second magazine, 1,834 pages. First quarter 1953: Architectural Record, 720 pages; second magazine, 414 pages. Source: Industrial Marketing.





**SLIDE DOORS**

**VERTICAL LIFT DOORS**

**TURNOVER DOORS**

**CANOPY DOORS**

**for any plant . . .  
for any purpose . . .  
MORE DOOR PER DOLLAR**

Many long-standing installations—in industrial and commercial buildings the country over—attest to International Steel's policy of designing and producing doors to assure four permanent qualities:

- (1) Easy, fast-acting operation.
- (2) Utmost safety and protection.
- (3) Longest trouble-free service.
- (4) Lasting weather-tightness.

When planning industrial door installations for any project—from small slide doors to the very largest special installations . . . motorized or manually operated . . . inside or outside installations—International Steel's specialized experience can be useful indeed. Your inquiries concerning any phase of industrial door development will always be welcomed.

*for full information write or wire*

**INTERNATIONAL STEEL CO.**  
1905 EDGAR STREET • EVANSVILLE 7, INDIANA

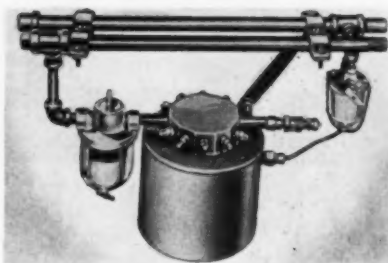
**free BUYERS' GUIDE  
TO THE BEST IN  
INDUSTRIAL DOORS —  
WRITE FOR YOUR COPY!**

## Architectural Engineering

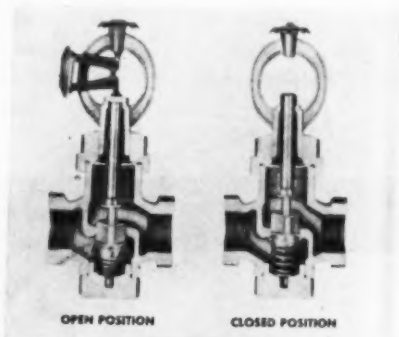
### PRODUCTS

(Continued from page 222)

#### INDUSTRIAL EQUIPMENT HEALTH & SAFETY



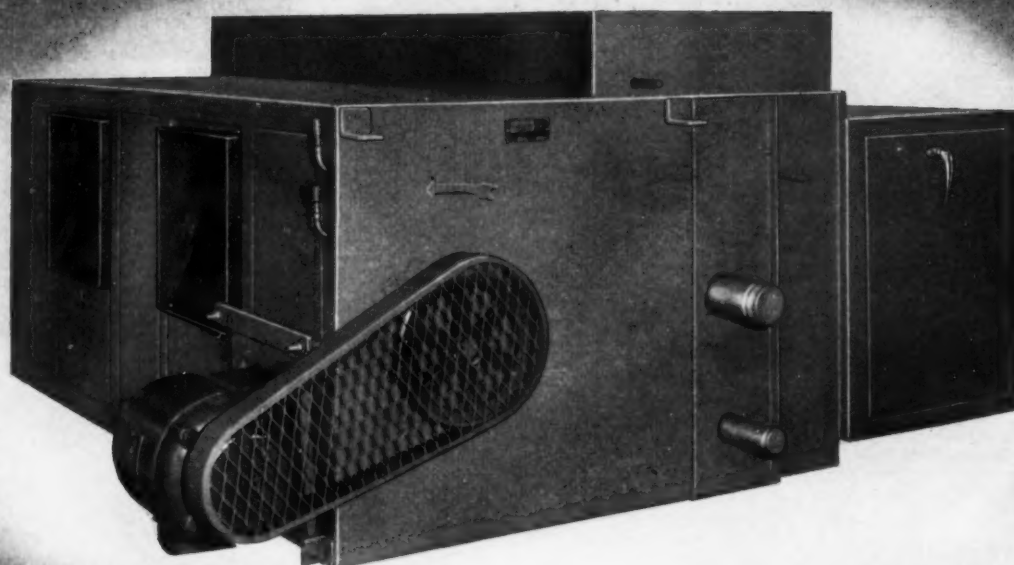
INSECT CONTROL protection is afforded by a "West" automatic, permanent atomizing system that can be installed economically in existing buildings or incorporated in new building plans. System consists of compact atomizer units attached by pipeline both to an insecticide reservoir and to the plant's compressed air or steam system. Using the air or steam as a propellant, the atomizer units break liquid insecticide into droplets and spray them out as a fine mist. One man can spread the fog through all plant areas simultaneously. West Disinfecting Co., Long Island City, N. Y.



SAFETY SHUT-OFF VALVE by Valco is a temperature-actuated automatic valve for use on any type of liquid or gas line at any pressure. The device is designed for use wherever a supply line must be immediately and positively closed because of unusual temperature rise. It is said to be particularly effective in combating fuel-fed fires since it cuts off the supply of fuel even if meters have melted and pressure reducing valves are damaged. It is also effective in closing lines carrying expensive or dangerous materials, such as solvents or process chemicals. Valco, Inc., 1410 West St., Cincinnati 15, Ohio.

(Continued on page 230)

**KENNARD**  
*Engineered*



## ***Heating and Ventilating Units***

***Air Volumes from 400 to 21,000 CFM***

Kennard Heating and Ventilating Units are the answer to requirements of heating and filtering recirculated air, fresh air, a mixture of both, or for ventilation only. These ruggedly constructed and easily installed units, conventionally used for heating large spaces or as a central station unit to heat many small rooms, can also be utilized for a variety of special and process applications.

Wall - Floor - Ceiling Mountings

Pre-heat and Re-heat Coils - 1.1 to 32.5 sq. ft. face.

Moderate tip speeds and outlet velocities

### **Optional Equipment**

Mixing Box and Dampers • Face and By-pass Dampers • Throwaway, Cleanable or High Velocity Filters • Target, Grid or Pan Humidifiers.

### **Representatives in Principal Cities**

Write for name of nearest representative and complete information on Air Conditioning Blower Units—Finned Coils—Evaporative Condensers—Cooling Towers—Sprayed Coil Dehumidifiers.

**KENNARD CORPORATION • 1819 S. HANLEY ROAD  
ST. LOUIS 17, MO., U.S.A.**



St. Leo's Roman Catholic Church, San Antonio, Texas. Building is 46 x 150 feet. Two-inch sheathing was installed on top of purlins, with acoustical tile applied to the under side. Architect was Harvey P. Smith and Associates, San Antonio.



## Glued Laminated Arches ...the perfect framing for the distinctive house of worship

What do you require of a church—impressive appearance...appropriateness...down-to-earth construction costs...long service life? Churches that are framed by glued laminated arches of Timber Structures, Inc. measure up on every count.

Pictures above tell their own story of beauty and appropriateness. Construction costs are lowered by the arches which bear the entire roof load. Precision fabricated, they are quickly erected, and relatively light curtain walls are fully adequate.

Arches are formed of seasoned timber, and are stronger pound for pound than other framing materials. They are dimensionally stable and free from seasoning action. Maintenance, therefore is slight, and life span is long.

Outstanding examples of church construction are shown in booklet, "Enduringly Beautiful Churches". Get your copy from your nearest Timber Structures representative, or write us for it.



## TIMBER STRUCTURES, INC.

P. O. BOX 3782-A, PORTLAND 8, OREGON

Offices in New York, Chicago, Detroit, Kansas City, St. Louis, Minneapolis, Dallas, New Orleans, West Hartford, Charlotte, Seattle, Spokane, Eugene.

TIMBER STRUCTURES, INC. OF CALIFORNIA . . . Richmond, California

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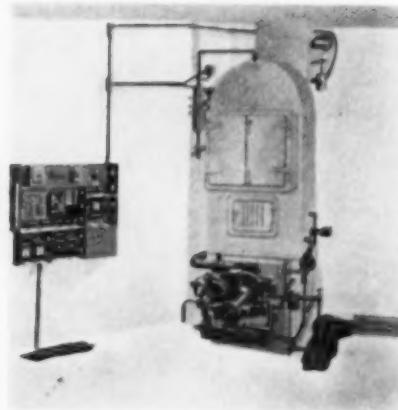
Local Representatives throughout the United States and Canada

## Architectural Engineering

### PRODUCTS

(Continued from page 226)

## INDUSTRIAL EQUIPMENT MAINTENANCE & REPAIR



INDUSTRIAL FUEL BURNING SYSTEM, the "York-Shipley F.C." is a complete factory-coordinated system, engineered, planned and processed by the manufacturer. It is described as offering for the first time a completely factory-engineered system built by a single manufacturer, so that the purchaser can obtain all the components from one source. Built around the "York-Power" burner for oil or gas firing, the system includes controls mounted in panels and wired to terminal strips for easy connection, factory engineered windbox assembly and refractory ring to guarantee quick installation, fuel oil heaters, and trim. York-Shipley, Inc., York, Pa.

### Scaffolding

Two new scaffolding lines have recently been marketed:

- *Universal Ladscaf* employs light-weight, ladder-type panels of welded steel construction, together with exclusively designed clamps. The clamps are said to be fast acting and to positively lock horizontal panels and braces to upright members without bolting. Ladder rungs are spaced at 1-ft intervals, so that working platforms can be placed at efficient levels and trouble free installations can be made on stairs and sloping floors. The scaffolding is described as safe and rigid, and it can be mounted on adjustable bases or lockable casters. Assembled scaffolds can be

(Continued on page 234)



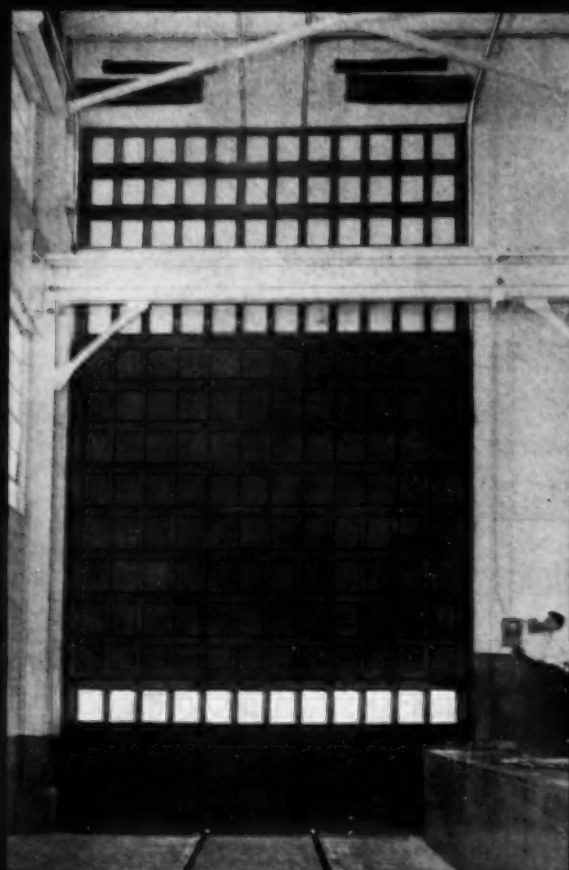


Barcol.

# OVERdoors

... when you  
need your doors  
... high, wide and handsome

Big Barcol OVERdoors operate almost as smoothly and easily as their little brothers, because they have twin torsion coil springs designed to the exact weight of each individual door. Barcol engineers compute the door weight right down to the glass, paint, and every ounce of plated hardware to assure proper springs for correct balance. Add the patented Barber-Colman *cam closing action*, and your door is sure to be weather-tight yet easy working. Weigh these features—perfect balance—weather-tight closing—easy operation. Take advantage of sound engineering principles by buying from your Barcol distributor. He sells, installs, guarantees, and services—quality care for a real quality product.



**HIGH** is the word for this big Barcol in the railway loading room of the Beloit Iron Works, Beloit, Wisconsin—constructed 32' high to clear the overhead crane rail.



**WIDE** loading area is provided by these three Barcols at National Lock Company. Center door is 27' 9" wide and 14' high. Maintenance Foreman Tony Vincent says, "We have over 50 Barcol OVERdoors—some of them open and close over 250 times daily!"



**HANDSOME** flush door with shadowbox lites at the Tydee Dydee Service, Rockford, Ill. States owner L. J. Schlickman, "It works just as well as my smaller Barcol door at home!"

## Barcol ELECTRIC OPERATORS

Save heat, save man-hours and speed plant traffic! The Barcol Electric Operator pays for itself in a short time. Easy to install on either new or old doors. The many convenient switch arrangements include radio control installed on factory trucks or any vehicles. Electric operator prices start at \$230 f.o.b. Rockford, Illinois.



## CALL YOUR BARCOL OVERdoor DISTRIBUTOR

(listed under "Doors" in telephone directory) or write for complete information.

BARBER-COLMAN COMPANY, DEPT. P38, ROCKFORD, ILL., U.S.A.

Name

Address

City & State



*Plan on Marlite*

## ...for non-residential building and remodeling

Marlite prefinished wallpanels are the answer to beautiful maintenance-free interiors at a cost to please your most budget-minded clients. Easily installed over old or new walls, Marlite is readily adaptable to every interior . . . every decorative treatment.

In hospitals, stores, restaurants, super markets, and hundreds more—Marlite soon pays for itself through maintenance savings. The soilproof baked finish never needs painting; cleans with a damp cloth. Look for the name Marlite on the back of every panel—it's your guarantee of satisfaction.

Get full details from your building materials dealer, refer to Sweet's Files, or write MARSH WALL PRODUCTS, INC., Dept. 805 Dover, Ohio. Subsidiary of Masonite Corporation.

for creating beautiful interiors



# Marlite®

PREFINISHED

WALL and CEILING PANELS

## Architectural Engineering

### PRODUCTS

(Continued from page 230)

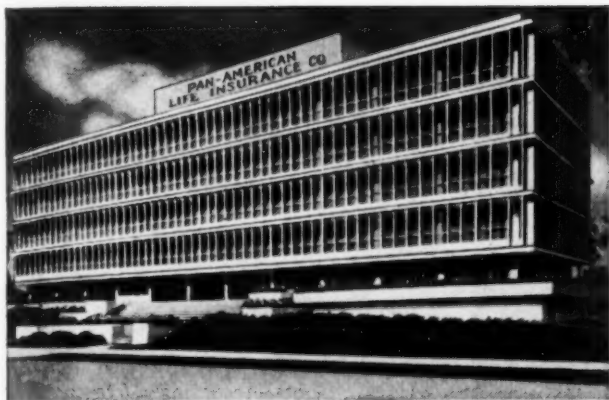
easily rolled to new locations, since stabilizers swivel back to permit passage through narrow aisles and confined working spaces. The scaffolding is designed for both indoor and outdoor painting and maintenance work. Universal Mfg. Corp., Zelienople, Pa.

• *Jagiel Kwik-Skaf*, a new tubular steel scaffolding, has only two basic parts, a frame and a tie bar. Bolts, pins and screws are eliminated by a slip-fit design, and the scaffolding can be quickly dismantled, transported and erected. Compact design is said to permit stacking in a small space and to simplify transportation. On the job, the scaffolding can be moved from one area to another without being dismantled. Simplicity and speed of assembly are said to suit it especially for industrial and other kinds of maintenance work, and for bricklayers, carpenters, masons, and roofers. In a recent "on-the-job" application, one man is reported to have erected a platform 4 ft high and 182 ft long in only 98 min. All parts used on this job were delivered by light truck. Made of prime welded steel tubing, the scaffolding is being manufactured by Brainard Steel Division of Sharon Steel Corporation. It will be distributed by Jagiel Mfg. Co., 415 Madison Ave., Toledo, Ohio.

### New Lamp Collection

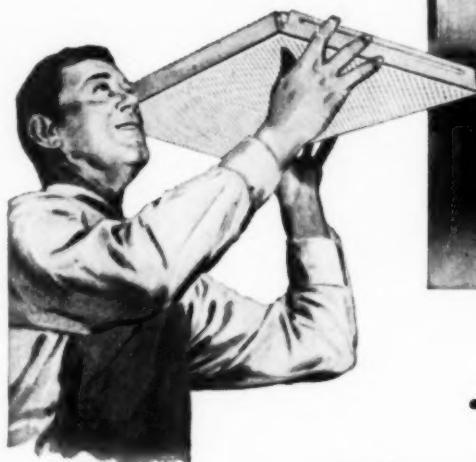
A new line of *Kurt Versen Lamps* has recently been introduced to the field. The line includes portable and pin-up lamps, table and desk lamps, and floor fixtures. Wall bracket units have been fitted with perforated metal reflectors, adding a decorative sparkle to interiors. They feature swivels with wrist action control for added flexibility. Fire-baked finishes include dusk gray, coral red, sage green, terra cotta and desert gold. Available in New York at Fabry Associates, 6 E. 53rd St. or from Kurt Versen Lamps, Inc., Englewood, N. J.

(Continued on page 238)



Thousands of square feet of J-M ▲ Sanacoustic are installed in the new Pan-American Life Insurance Co. building in New Orleans . . . a recent "Office of the Year" award winner.

▲ A Johns-Manville Sanacoustic Ceiling provides quiet comfort and a cheerful atmosphere in the cafeteria of the new Pan-American Life Insurance Co. building.



## ... this insurance company installed Johns-Manville **SANACOUSTIC\***

***J-M Sanacoustic is a highly efficient noncombustible acoustical unit ideally suited for institutional and commercial installations.***

Johns-Manville, the pioneer in sound control, developed Sanacoustic to provide acoustical comfort, fire safety and easy maintenance for offices, cafeterias, schools, restaurants, auditoriums, hospitals, etc.

The complete Sanacoustic unit is manufactured by Johns-Manville. It consists of a perforated metal panel backed

up with a noncombustible, sound absorbing element of high acoustical efficiency. J-M Sanacoustic Ceilings will not burn, rot or disintegrate. A baked-enamel finish makes them easy to keep clean. They may be applied over new or existing construction; and can be painted and repainted without loss of acoustical efficiency.

An exclusive J-M patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical ceiling units.

Other J-M Acoustical Ceilings include Fibretone\*, a drilled fibreboard panel, Permacoustic\*, a textured noncombustible tile, and perforated Transite\* Acoustical panels. For a free brochure "Sound Control," write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 199 Bay Street, Toronto 1, Ontario.

\*Reg. U. S. Pat. Off.



# Johns-Manville

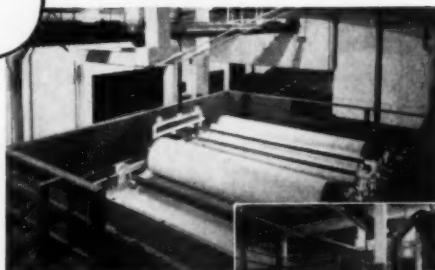
40 years of leadership in the manufacture of acoustical materials.



LET'S GO, KIDS.  
I CAN'T SUPPORT  
A FAMILY ON  
**WOLMANIZED\***  
LUMBER



This Everett, Wash. tank of Wolmanized lumber will last for years



Two views of a Longview installation made rot-resistant by Wolmanized lumber.

## How Weyerhaeuser Timber Co. Uses Wolmanized Pressure-Treated Lumber

In its Longview and Everett, Washington plants, the Pulp Division of Weyerhaeuser Timber Company is experiencing the value of Wolmanized pressure-treated lumber.

Pulp production's just about the "wettest" wet process there is. One that would cause ordinary lumber to soften in a matter of months. Over sixteen years ago Weyerhaeuser used Wolmanized pressure-treated lumber in their Longview plant for the first time. In spite of decay-producing moisture, that first Wolmanized installation is still in good condition, still giving Weyerhaeuser service. And now the newest mill in the industry at Everett, Washington, is

being rot-protected by Wolmanized tanks, process equipment, and structural lumber.

Wolmanized lumber's resistance to rot is largely due to the fact that Wolman preservative solutions are forced deep into the fibers of the wood by high pressures... not just brushed on or soaked in. And Wolmanized pressure-treated lumber is odorless, non-oily, clean, and completely paintable.

Wolmanized pressure-treated lumber is distributed nationwide, since Wolman preservative treatment plants are located in all parts of the country. Learn how you can get lasting rot and termite protection for your wooden structures. For full information write:

### American Lumber & Treating Company

General Offices: 1601 McCormick Building, Chicago 4, Illinois

Offices: Little Rock, Arkansas • Portland, Oregon • Boston • Los Angeles  
San Francisco • Baltimore • New York • Jacksonville, Florida • Seattle



**Wolmanized**  
PRESSURE TREATED  
**Lumber**

\*Reg. U. S. Pat. Off.

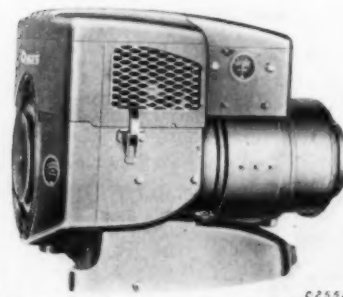
## Architectural Engineering

### PRODUCTS

(Continued from page 234)

#### Electric Generating Plant

A new 3500-w, Onan electric generating plant, to be known as the Model 305CK, has been designed to meet demands for higher capacities in small size electric plants. According to the manufacturer, it has a 4000-w peak overload capacity for periods of up to two hours' operation. Small and compact, the new unit is an all around electric plant, and can provide either primary or emergency power for stationary, portable or mobile applications. It is available in manual or remote starting models, and fully



Compact electric generating plant provides primary or emergency power

automatic and line transfer controls are available for the remote units. For standby service, the line transfer control will start the unit within seconds after highline power fails. When service is restored the plant is stopped automatically. The 115-v, 60-cyl unit is powered by a 2-cyl 4-cyl, air-cooled gasoline engine with a patented improvement said to give it an increased rated output of 500-w over similar models made by the manufacturer. Voltage regulation is plus or minus three per cent, said to satisfy requirements of almost any application where regulation is a vital factor. The engine is built for rugged service and delivers its full rated load with fuel consumption of only 0.68 gal. per hr. Complete specifications are available upon request for form A-100-L. D. W. Onan & Sons, Inc., Minneapolis, Minn.

(Continued on page 242)



## Why not make it all modern?

—SPECIFY RECESSED **SCOTT** FIXTURES

SOME old-fashioned washrooms may be quaint, but very few are practical. Seems to us that washrooms ought to be as modern as the rest of a building.

It has been our concern for a long time now to help you in planning functional washrooms. For example, we have a number of ScotTissue Towel fixtures—recessed and other-

wise—that can make life a lot easier for everybody.

We've just printed a full-color booklet showing what we've learned over the years about washroom design. Send for your copy on your company's letterhead today.

Write *Scott Paper Company, Dept. C-1, Chester, Pennsylvania.*

"ScotTissue," Reg. U. S. Pat. Off.



Scott No. 943 Recessed Towel Cabinet.



Scott No. 945 Recessed Towel Cabinet and Waste Receptacle.



**SCOTTISSUE TOWELS** SYMBOL OF THE RIGHT KIND OF WASHROOM

## PRODUCTS (Continued from page 238)

### Signal Alarm Unit For Processing Operations

*Monolarm*, a signal alarm unit designed for modern flow line and graphic panels, is reported to take up minimum space on front and back of panelboards. This feature is said to make the unit especially valuable where graphic vessels and flow lines must give their visual recordings of processing operations with-

out interference from bulky signal alarm units. The new device offers instant warning against any abnormality occurring in a processing operation at any time, and helps safeguard against expensive losses of production and materials. When abnormalities occur, a light (which normally shines constantly) flashes rapidly on and off. If auditory signals are employed, these too are sounded. Acknowledgement of the con-

dition by the operator must be made by turning the re-set switch. The alarm light then assumes a steady state until the condition is remedied. Then the device automatically resumes normal indication.

Among advantages cited by the manufacturer are the following (for Class I, Groups C & D, Division 2 operation): A single narrow bezel and button fits into a flow or graphic line diagram without interrupting the continuity of the design story; lighting indications may be made in two or three colors on one bezel; relamping is quick and easy from the front of the panel; instantaneous connection and disconnection of the power supply cable is provided by an interlocking switch receptacle and plug; maximum safety is afforded by interlocking the plug with the hermetically sealed switch, making it impossible to insert or withdraw the plug under load; hermetically sealed plug relays are instantly removable if replacement is necessary.

To counteract turbulence and vibration when an abnormal condition is reached, a time delay circuit is available. For continuity of panel appearance, a matching pilot light is also available. Complete details may be had upon request for sales data sheet No. 2125387P. Russell & Stoll Co., Inc., 125 Barclay, New York, N. Y.

## COLOR VARIETY FOR REDWOOD

Architect:  
C. E. Green,  
Providence, R. I.



Cabot's Stains offer a variety of interesting effects . . . from natural to weathered tones . . . assure years of protection and beauty.

**CABOT'S 325 CALIFORNIA REDWOOD STAIN** — *specially blended pigments blended in Creosote oil capture and preserve the natural color of new Redwood.*

**CABOT'S 3625 SEQUOIA RED STAIN** — *Similar color to Cabot's California Redwood Stain but with heavier pigmentation and greater hiding power.*

**CABOT'S 351 EUCALYPTUS GRAY CREOSOTE STAIN** — *imparts a delicate greenish gray color to the wood.*

**CABOT'S 241 CREOSOTE BLEACHING OIL** — *turns wood to driftwood gray, which develops gradually over 6 months' exposure.*

**CABOT'S 800 CLEAR GLOSS FINISH** — *a transparent waterproof finish producing a lustrous gloss . . . particularly designed for Redwood.*

**WRITE TODAY** for folder "Redwood Staining", and color card.

**SAMUEL CABOT, INC.** 829 Oliver Bldg., Boston 9, Mass.

**CABOT'S**

**REDWOOD STAINS**



### Movable Classroom Cabinets

A new line of flexible and versatile school furniture has recently been introduced. *Adjustable Cabinets* have been designed to grow with the students, being fitted with bolted peg-leg adjustable discs which raise the tabletops to heights of 24 in., 26 in. and 28 in. This permits conversion of a kindergarten to a classroom for older students in a matter of minutes. Included in the line are storage units, reading units and a clothing

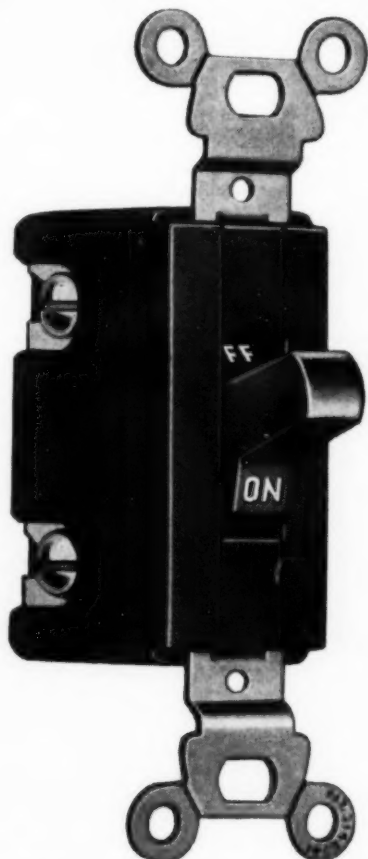


(Continued on page 246)



# NEW A. C. SWITCH LINE

THE ANSWER IS  
**BRYANT**



15 Amperes 120 Volts—A. C. only  
15 Amperes 277 Volts—A. C. only

## APPLICATIONS

- ... the 4801 line can be operated to their full rated capacity for the control of Incandescent and Fluorescent (inductive) lighting loads.
- ... rated at 277 Volts, these switches are listed and approved for all types of loads at this voltage.
- ... for control of motors with current ratings up to 80% of switch rating.

Bryant announces a new line of quality switches for A. C. operation only. The 4801 line meets all specifications and is another addition to the full Bryant wiring device line for home, office and industry.

## Look at these features of this new line:

- Rugged, compact plastic body.
- Fine silver contacts for long-life.
- Totally enclosed mechanism.
- Quiet operation . . . for installation where minimum switch noise is desirable.
- Concealed yoke with washer type ears.
- Screw clamp terminals for easy wiring . . . straight-in from back, or conventional side wiring. Large head terminal screws accommodate up to No. 10 wire, solid or stranded.
- Handy wire strip gage.
- Available in Single Pole, Double Pole, 3-way and 4-way with Brown or Ivory handles.
- Takes standard switch boxes and standard switch plates.

*Listed by Underwriters' Laboratories, Inc.*

## THE BRYANT ELECTRIC COMPANY

Bridgeport 2, Connecticut

Chicago • Los Angeles



*Specify Bryant  
from Your  
Electrical  
Distributor*

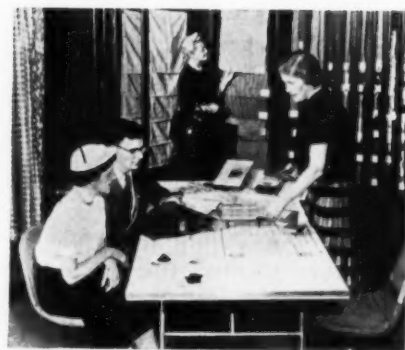
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## PRODUCTS (Continued from page 242)

cubicle. Solid hardwood is used for the frames and work surfaces are  $\frac{3}{4}$  plywood with plastic laminate tops. Some of the pieces are equipped with double wheel casters to facilitate moving. Not only can the furniture be easily moved from room to room, but a single classroom can be divided into separate sections to serve more than one function. Adjustable Cabinets, Inc., 400 Seajaquada St., Buffalo 11, N. Y.

### Planning Aid for Furniture Arrangement

A new planning aid, a table with a top ruled in  $1\frac{1}{2}$ -in. squares, is in current use in the New York showroom of the Herman Miller Furniture Co. Measuring 36 by 84 in., the table has a top of "plus-lite" board, a recently developed washable surface material. The *Grid Table* enables a staff consultant to draw a floor plan outline on it, using the cus-



tomers' own room dimensions. Wooden scale models of furniture may then be set into the plan, creating a three dimensional effect and providing solutions for the customer's furniture arrangement problems. Herman Miller Furniture Co., Zeeland, Mich.

### New Furniture Showroom

A new *Sligh Showroom* in New York City was recently opened to the trade, and features designs manufactured by the three Sligh factories. Including the complete line of traditional desks and bookcases of the Sligh-Lowry Furniture Co. in Zeeland, Mich., the showroom also displays the well-known Keynote Group of contemporary furniture, manufactured by the Charles R. Sligh Co. of Holland, Mich., and the entire line of 'Cross Country' furniture, manufactured by the Grand Rapids Chair Co. of Grand Rapids, Mich.

The showroom interior was designed by David G. Whitcomb, and carries out a contemporary feeling throughout. Various shades of brown and blue have been used, with a vinyl floor in a terrazzo design. Off-white bamboo drapes provide a light and airy feeling. Sligh Furniture Showrooms, Inc., 305 E. 63rd St., New York, N. Y.



GENERAL CONTRACTORS J. A. Jones Construction Co., Atlanta, Ga. Butler & Cobbs, Montgomery, Ala.  
ARCHITECTS & ENGINEERS Sherlock, Smith & Adams, Inc. Montgomery, Ala.

## THE LIVESTOCK COLOSSEUM

ERECTED BY THE STATE OF ALABAMA BUILDING COMMISSION  
FOR AGRICULTURAL, INDUSTRIAL, EDUCATIONAL & EXPOSITIONAL USE

This 260 ft. x 130 ft. oval colosseum is crowned by 16,000 sq. ft. of SEAPORCEL (*Leathorcel Finish*) architectural porcelain enameled wall panels. In beautiful soft green, the *Leathorcel* texture harmonizes with the rest of this striking structure. Installed by Seaporcel's own erection crews the porcelain panels are backed by a one inch insulating material for sound insulation.

Here is a *truly* permanent facing material of *lasting* beauty!

### FOR SOME JOB...SOMEWHERE...YOU CAN USE SEAPORCEL!

To find out how porcelain enamel can fit into your plans, ask for our local representative to call, or write for Brochure No. 2

SEAPORCEL METALS, INC.	SEAPORCEL PACIFIC, INC.
2800 Borden Avenue	1461 Canal Avenue
Long Island City 1, New York	Long Beach 13, California

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Also manufacturers of  
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SEE OUR  
CATALOG IN  
SWEET'S  
1953

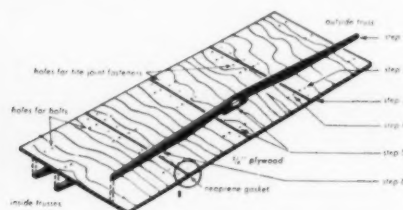
**Seaporcel**

ARCHITECTURAL  
PORCELAIN

Complete Engineering and Erection Departments • Member: Porcelain Enamel Institute

### CORRECTION

The RECORD regrets that in reporting on the Tavart Company's booklet of prize-winning garage door designs, June 1953, p. 180, it mistakenly referred to the manufacturer as the Travert Company. Below is one of the designs from the book, by L. Dees-Porch & Paul Grunberg.



# Here's **PROOF** of ACME acceptance throughout the refrigeration industry

For over thirty years ACME has been producing air conditioning and refrigeration products preferred by original equipment manufacturers of commercial and industrial refrigeration and air conditioning equipment.

ACME's background as heat transfer specialists means dependable, highly efficient fluid chillers, freon and ammonia condensers, oil separators, heat exchangers, liquid receivers, evaporative condensers, cooling towers, and allied products for original equipment manufacturers and general distribution.

Products of the outstanding manufacturers whose trademark appears on this page depend on ACME to maintain their high standards by using components from the complete Acme line.

These Original Equipment Manufacturers . . .

**WORTHINGTON**

**Carrier**



**Lehigh  
BLUE-GOLD**  
COMMERCIAL REFRIGERATION

**GENERAL ELECTRIC**

**bryant**

**Curtis**  
REFRIGERATION  
AIR CONDITIONING  
COMMERCIAL

**Chrysler Airtemp**

**TRANE**

**MILLS INDUSTRIES, Incorporated**

**Westinghouse**

**Copeland**  
DEPENDABLE REFRIGERATION



**US AIR CO**

**SCHNACKER**

**Baker**  
AIR CONDITIONING  
and REFRIGERATION

**BRUNNER**  
SINCE 1902

Select component parts from this  
**COMPLETE ACME LINE**

## DRY-EX® WATER CHILLERS

More than 700 combinations from which to choose, assuring you of the most efficient chiller operation obtainable. Capacities from 5 to 260 tons for all common liquid chilling applications.

## ACME CONDENSERS

More than 120 models and standard sizes of Freon and Ammonia shell and tube, and shell and coil types. Capacities from 1/2 to 700 tons.

## BLO-COLD® INDUSTRIAL UNIT COOLERS

For vegetable storage, packing plants and low temperature installations. 5 distinct series for either Freon or Ammonia with more than 260 combinations.

## ACME COOLING TOWERS

Available for use where compactness counts. An all metal tower completely galvanized for long life. Capacities from 3 to 60 tons.

## ACME OIL SEPARATORS

A complete line of Freon or Ammonia separators for 1/4 to 100 ton systems.

## ACME HEAT EXCHANGERS

Compact, efficient Freon suction and liquid line heat exchangers designed for systems from 3 to 200 tons.

## ACME LIQUID RECEIVERS

More than 70 standard sizes for Freon, Ammonia, or other refrigerants.

## HI-PEAK® WATER COOLERS

Seven standard sizes providing large storage capacity and all non-ferrous surfaces in contact with the fluid.

## ACME EVAPORATIVE CONDENSERS

For Freon or Ammonia. More than 30 models with capacities up to 1,250,000 BTU/hr. from which to choose. Your choice of either copper tubing or pipe coils. Completely hot-dipped galvanized after fabrication. Capacities from 4 to 130 tons.

## FLOW-COLD® PACKAGED LIQUID CHILLERS

A factory assembled, pre-tested liquid chilling unit shipped ready for instant installation. Balanced performance from matched Acme components for systems of 2 to 15 tons. Also used as a Heat Pump providing both heating and cooling for year-round air conditioning.

## FLOW-TEMP® REMOTE ROOM CONDITIONERS

Designed for the modern recirculated hot or cold water air conditioning systems. Whisper quiet with variable air recirculation permits efficient individual zone control.

\*Trade Mark

**ACME INDUSTRIES, INC.**

Continuously serving the Air Conditioning and Refrigeration Industry since 1919



JACKSON,  
MICHIGAN

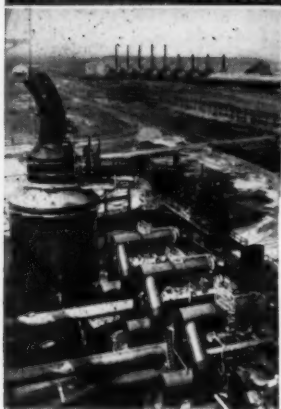


# "BIG STEEL"

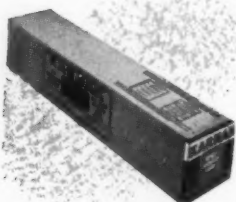
NEEDED

## Karnak®

WATERPROOFING PRODUCTS



Fairless Works of United States Steel Corporation's plant at Morrisville, Pa., on the Delaware River, is the country's largest single steel construction project undertaken at one time. Waterproofing done by Lewis and McDowell, Inc., New York City.



Karnak fabric is packed in a sturdy corrugated carton for protected shipping and storage. It keeps the fabric in perfect condition until used...cuts fabric loss.

When permanent waterproofing was wanted on the foundation of U. S. Steel's new "Fairless Works," Karnak was chosen by the contractor. This is the largest individually financed industrial project in the world and called for the best in all materials. That's why 750,000 yards of Karnak were used to protect against water, wherever there was a hydrostatic head.

Why Karnak? Because it has the Membrane System of waterproofing that holds secure against hydrostatic head or any water condition.

The secret to the extreme water resistance is the Karnak Membrane Fabric. Open Mesh Cloth, specially woven of long, fiber cotton is carefully saturated with highly refined asphalt so as to leave the mesh open. When this fabric is layered on the job with alternate moppings of liquid asphalt, it provides a tough, thoroughly waterproof membrane that resists cracks, abrasion and settling to maintain water resistance through the life of the structure.

The non-sticking fabric unrolls easily...to the very end. It "works" faster and with no waste. It saves labor costs on the job.

The Karnak system is also the best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels.

Send coupon for complete information.

**LEWIS ASPHALT ENGINEERING CORP.**  
30 CHURCH ST., NEW YORK 7, N. Y.



### OTHER KARNAK PRODUCTS

Roofing and Waterproofing Fabric	Caulking Compounds	Aluminum Roof Coating
Asphalt Roof Coatings and Cements	Asphalt Emulsions	Wood Block Mastic
	Floor Mastic	Tile Cement
	Asphalt Paint	Joint Filler

### LEWIS ASPHALT ENGINEERING CORP.

30 Church St., New York 7, N. Y.

Please send me **FREE** information about  
KARNAK Membrane System of Waterproofing

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ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

Other items I'd like to know about \_\_\_\_\_

### Architectural Engineering

### LITERATURE

(Continued from page 184)

### INDUSTRIAL EQUIPMENT

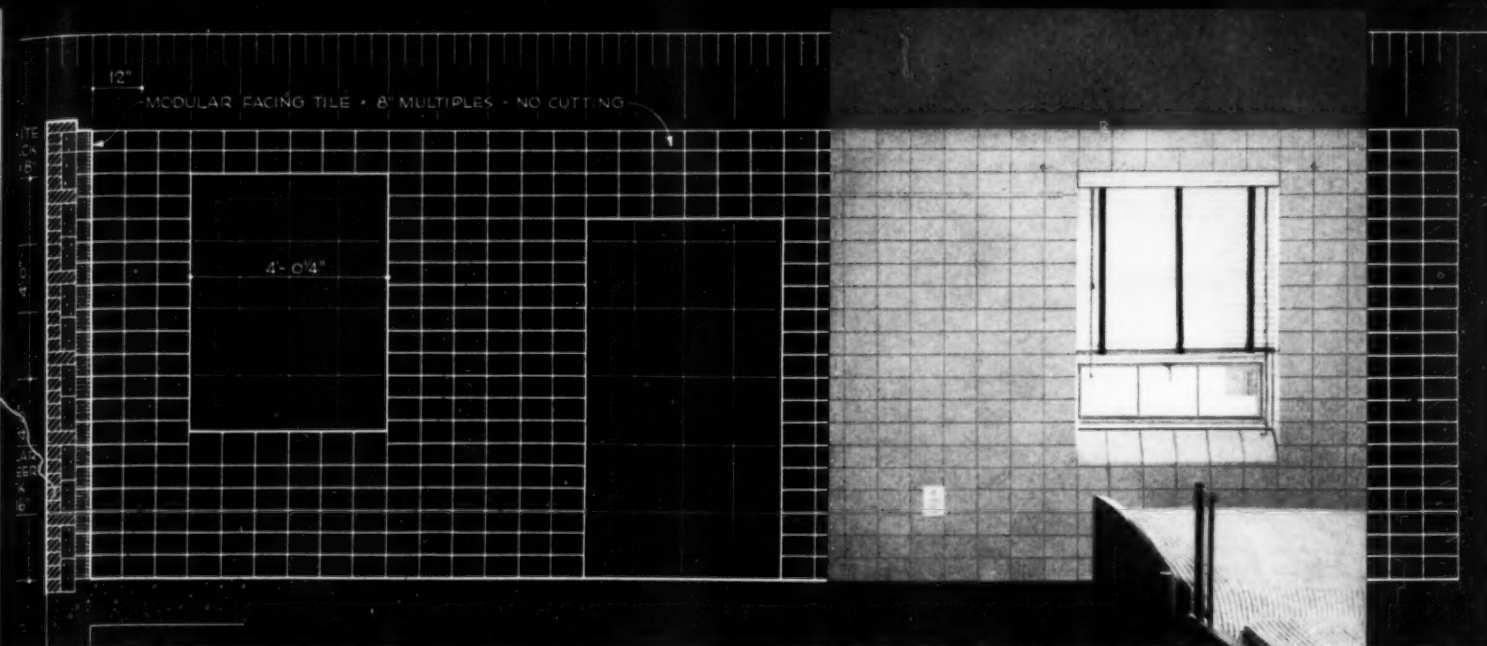
- *Rowe Adjustable Ramps for Loading Docks.* Brochure gives information on the manufacturer's two units designed to increase handling efficiency on shipping and receiving docks. The *Adjust-A-Dock* bridges the difference in height between docks and rail cars and highway trucks, whereas the *Adjust-A-Truck* was designed for places where there is not enough room on or in front of the docks to install adjustable dock ramps. Specifications and installation details are included. 3 pp., illus. Rowe Methods, Inc., 2534 Detroit Ave., Cleveland 13, Ohio.

- *Convair Pneumatic Conveying Systems.* Brochure gives brief information on several types of conveyor systems and illustrates each with an accompanying drawing. A list of materials commonly handled on such systems is also included. 7 pp., illus. Convair, Inc., 714 Brookline Blvd., Pittsburgh 26, Pa.

- *Mastic Cold-applied Asphalt Flooring.* Brochure describes use of material as a new surfacing over old concrete or wood floors as well as an underlayment for leveling floors prior to the application of tile, linoleum, etc. Proportions for mixing as well as ingredients specified for certain jobs are given. 3 pp., illus. United Laboratories, Inc., 16801 Euclid Ave., Cleveland 12, Ohio.

- *Case Studies in Modern Lifting.* This booklet shows how hydraulic lifts solve industry's problems of lifting, loading, positioning and materials handling. Photographs and diagrams accompany each problem and its solution, and survey forms are bound into the book for the use of persons interested in obtaining data on the application of hydraulic lifts to a particular problem. 30 pp., illus. Globe Hoist Company, 1000 E. Mermaid Lane Philadelphia 18, Pa.

(Continued on page 254)



Elevation and section show how architects Lorenz and Williams use modular-sized brick and structural facing tile to eliminate cutting and fitting, simplify construction. Note clean appearance of patients' bedroom (above). Facing Tile units are coordinated with window openings on a 4" module.

## modular brick and tile cut convalescent hospital's cost, speed construction

In this friendly, 50-bed convalescent hospital for crippled children, coordination of all structural elements on a 4" module helped to save time and money for both architects and builders.

>> Architects Lorenz and Williams employ modular-size, double-face structural clay facing tile units for non-bearing partitions and single-face units as the inner wythe of exterior walls. The exterior is faced with modular red brick and white brick trim. Modular dimensions throughout reduce costly on-site cutting and fitting around openings. And the materials themselves save maintenance and provide a colorful, informal environment for young patients.

>> Says the general contractor, "With designer, manufacturer and craftsman working to the same fixed unit of measure, job costs and construction time were reduced, permitting earlier occupancy by patients."

Add these two free booklets to your file on modular design: "The ABC of Modular Masonry," "Modular Sizes of Brick and Tile." Address AR-8.

Barney Convalescent Hospital, Dayton, Ohio. Architects: Lorenz and Williams. General Contractor: Maxon Construction Company.



**STRUCTURAL CLAY PRODUCTS INSTITUTE**



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**MORE ENGINEERING  
MORE MATERIAL  
MORE EXPERIENCE**

**MAKE THE DIFFERENCE**



**KEWANEE**

### STEEL BOILERS

Kewanee Boilers could not have led their field continually for more than 80 years if they were not different. And that difference is the extra amount of engineering, material, labor and experience which goes into every Kewanee product.

Hospitals of today require more from their heating systems. Exposed to winds from every direction . . . as is Saint Joseph's, Hazleton, Penna. . . the boiler room is called on continually for additional steam.

Hospitals also must have high pressure steam for sterilizing, kitchen and laundry equipment. Both requirements can be met dependably and economically with Kewanee Heavy Duty Boilers.

**KEWANEE-ROSS CORPORATION**

Division of American Radiator & Standard Sanitary Corporation

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### SAINT JOSEPH'S HOSPITAL

Hazleton, Penna.

**GEO. E. YUNDT**

Architect and Engineer

3 Kewanees, 125 lbs wp

installed by **GEO. F. DeLALLO**

## Architectural Engineering

### LITERATURE

(Continued from page 250)

## INDUSTRIAL EQUIPMENT

• *Industrial Controls (Catalog 8305).* This catalog describes and illustrates non-indicating electric, electronic and pneumatic controllers for temperature, pressure and humidity, also pneumatic and electric valves, switches and relays. Specifications, dimension drawings, photographs, application data and ordering information are included. The index on the last page is given both alphabetically and by model numbers. 80 pp., illus. Minneapolis-Honeywell Regulator Company, Industrial Division, Station 64, Wayne and Windrim Avenues, Philadelphia 44, Pa.

• *Power Cranes, Shovels and Draglines — Attachments, Traction and Operation. (Technical Bulletin No. 4)* This booklet is intended as text material for persons dealing with excavating and equipment handling problems. Its subject matter covers the available front-end attachments which may be used with power shovels, their application and the effective use of these attachments with the proper positioning of the basic unit for specific jobs encountered in the field. Many diagrams and tables make this bulletin especially useful and practical. Available at a cost of one dollar, with complimentary copies being furnished to engineering schools and colleges. 60 pp., illus. Power Crane and Shovel Association, 74 Trinity Place, New York 6, N. Y.

• *Maintenance Supplies Check List.* This folder was prepared for the convenience of managing personnel in hotels, hospitals, schools, industrial plants, commercial and other public buildings. Spaces are provided for entering quantities on hand as well as quantities needed to restore stocks to normal levels. 4 pp. Huntington Laboratories, Inc., Huntington, Ind.

(Continued on page 258)

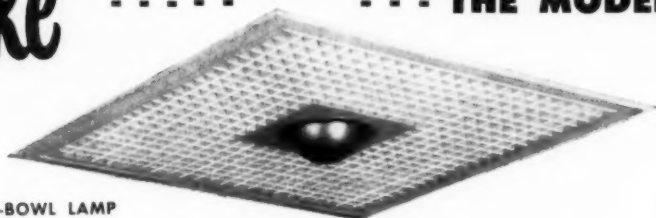




A pattern of Skylike units using 300 w. lamps provides perfect lighting in The McDaniel's Store in Grand Rapids, Mich.

# Skylike

----- THE MODERN LIGHTING SYSTEM



WITH THE SILVERED-BOWL LAMP

**selected by leading  
RETAIL STORES  
SPECIALTY SHOPS  
DEPARTMENT STORES**

Today's modern merchandising in the stores of America demands modern surroundings. Redesigning the display and selling areas in all types of stores has been a prime problem of architects who, through their combined talents, have produced that high degree of effectiveness, appearance and utility that is the world's standard today.

And, in those plans, lighting is of vital importance. It must show merchandise in its true value; the unit must be architecturally correct and provide economical lighting. Above all it must be shielded from all critical angles of vision for comfortable seeing. That's why SKYLIKE is being selected for the majority of important store installations.

#### FOR COMPLETE DETAILS:

An 8 page booklet fully describing Skylike recessed and surface mounted units, its adaptability and ease of installation in new or remodeled applications is free for the asking. Just fill in, clip and mail this coupon.



SKYLIKE Lighting, Inc. 102 West Main St., Bound Brook, N. J.

Gentlemen:

Please send me complete information on Silvray SKYLIKE

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FIRM \_\_\_\_\_ TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

# ADEQUATE DRAFT

REGARDLESS OF WIND, WEATHER OR  
LOCATION—AND

WITHOUT TALL,

UNSIGHTLY

STACKS

BY THE USE OF

## WING DRAFT INDUCERS

YOU GAIN THESE ADVANTAGES:

- **Exact Draft with Precise Control**
- **Substantial Savings in Maintenance**
- **Ease in Installation**

The advantages of mechanical draft over natural draft are tremendous. Draft produced by stack or chimney is seldom reliable, varying according to weather conditions. The motorized draft inducer makes its own draft regardless of weather conditions or variation in load. The necessity for tall, ugly, expensive stacks is eliminated, permitting the architect to design a more attractive building. Write for a copy of Bulletin I-52.

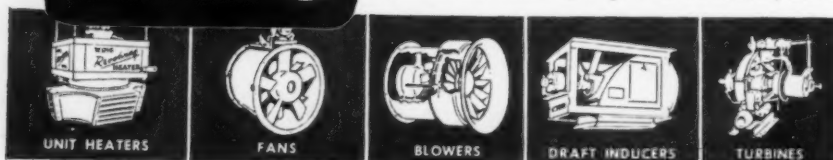
# Wing

## L. J. Wing Mfg. Co.

151 Vreeland Mills Rd.

Linden, N. J.

Factories: Linden, N. J. and Montreal, Can.



High Hats  
are out  
of date

now—

it's the  
Homburg

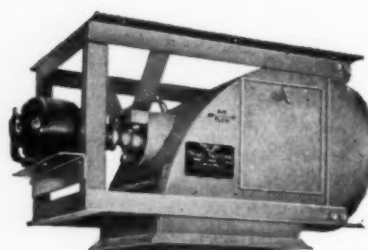
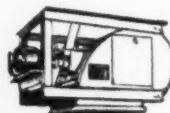


High Chimneys,  
too, are out  
of date

now—

it's the  
WING

DRAFT INDUCER



## Architectural Engineering

### LITERATURE

(Continued from page 254)

### INDUSTRIAL EQUIPMENT

• *Aluminum in Materials Handling.* This booklet is a reprint of six articles reporting the results of a survey covering more than 50 manufacturers and users. The use of aluminum in food packing, meat packing and materials conveying is described, and advantages of lower transportation and handling costs are stressed. Varied examples of light-weight equipment for numerous industrial purposes are also given. 19 pp., illus. The Aluminum Association, 420 Lexington Ave., New York 17, N. Y.

• *Proper Maintenance of Control.* Pamphlet gives suggestions toward overcoming some of the most frequent difficulties common to electrical control devices and includes a chart for quick reference showing the symptom, possible cause and cure. The back page of the manual carries a listing of 26 suggested points for checking to assure satisfactory preventive maintenance of control equipment. 7 pp., illus. Allis-Chalmers Manufacturing Company, 1184 S. 70th St., Milwaukee, Wis.

• *Rubora Expandable Concrete Form.* Catalog is heavily illustrated, showing various proportions the form may be adjusted to, placing and fitting of the form panel, various applications of forms for floors, roofs and walls, and finally, shoring of the forms. A simple table is also included, defining the relationships between thicknesses of concrete floors and distances between supports. 6 pp. Kurt Orban Company, Inc., 205 E. 42nd St., New York 17, N. Y.

• *Cleveland Hard Facing, Inc.* Brochure describes the method of applying hard alloy metal to a low alloy steel base at areas of wear to hold down production costs on original equipment. It illustrates how operating life of worn equipment is increased by the proper and

(Continued on page 262)

**WHAT  
GOES ON  
HERE?**



Pictured above is just a small part of the technical staff available at Aetna Steel to engineer the custom production of Aetna hollow metal products.

As every architect knows, engineering follow-through on specifications is high on the list of factors which determine the success of a job.

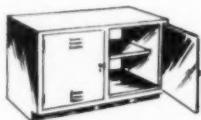
Aetna engineering and research is backed by fifty years' experience in the design and manufacture of hollow metal products.



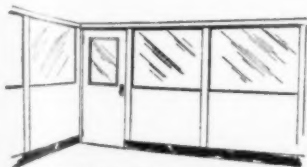
That's why architects know they can depend on Aetna for the kind of care and regard for detail which clear the way for quick and economical installation.



STEEL DOORS AND FRAMES



STEEL HOSPITAL CABINETS



AETNAWALL METAL PARTITIONS

## **AETNA STEEL PRODUCTS CORPORATION**

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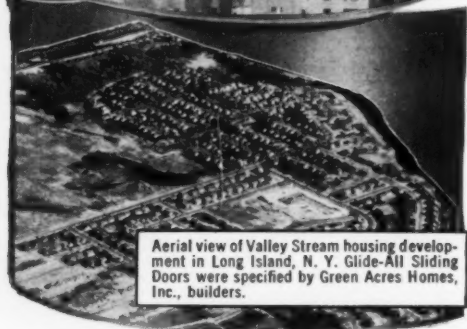
MANUFACTURERS OF STANDARDIZED STEEL DOORS AND FRAMES FOR HOUSING UNITS.

FABRICATORS OF QUALITY HOLLOW METAL PRODUCTS FOR SCHOOLS, HOSPITALS, OFFICE BUILDINGS, ETC.



There's a place  
in every blueprint  
for  
**GLIDE-ALL**  
*Sliding Doors*

...they're durable, versatile, lower in cost



**INSTALLATION AS SIMPLE AS ABC**



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**B** Aluminum threshold is screwed to floor.



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**Architectural Engineering**

**LITERATURE**

(Continued from page 258)

**INDUSTRIAL EQUIPMENT**

economical application of hard facing. Several hardware items are pictured which typify places where hard facing is effective. Cleveland Hard Facing, Inc., 3047 Stillson Ave., Cleveland 5, Ohio.

• *Linde Welding.* This bulletin gives discussion rather than detail on the subjects of sigma welding, multiple-electrode welding, automatic tracing and flame plating. A conversational description of each type of welding is included which serves to point out the different uses of each. However, all information contained here is only intended as auxiliary information to the announcement of the American Welding Society's Welding and Allied Industry Exposition, held in the Shamrock Hotel and Hall of Exhibits in Houston, Tex., June 16 to 19, 1953. 3 pp., illus. Linde Air Products Company, Div. of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y.

• *Conveyor Terms and Definitions.* New and revised edition of book lists 1500 terms relevant to conveyors and is illustrated with line drawings of over 80 types of conveyors and parts. Fanciful terms sometimes used to describe conveyors are given their exact definition for industrial specifications. The volume is available from the Conveyor Equipment Manufacturer's Association, No. 1 Thomas Circle, Washington, D. C. or from Association members. Price \$1.

**LITERATURE REQUESTED**

The following individuals and firms request manufacturers' literature:

Hosmer V. Phelps, Student, 1535 Jones St., San Francisco, Calif.

Athol D. Richards, Architect, 10 Trafford Ave., Elsternwick S.4., Victoria, Australia.



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For further information see SWEET's Catalog, Section 12g/Un and 3d/Un, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

Architect:  
Harold Spitznagle,  
Sioux Falls, S. D.  
Terrazzo Contractor:  
Sioux City Mosaic Co., Inc.,  
Sioux City, Ia.



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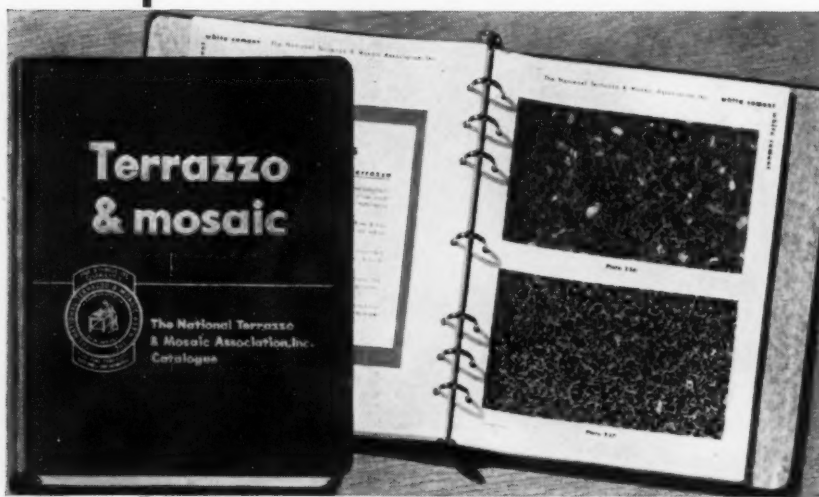
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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 38)

Finance Agency was held early last month. This was a curtain-raiser for numbers of such meetings in which Administrator Albert M. Cole planned to discuss housing problems with all interested groups and individuals over a two-month period. Findings are expected to form the basis of projected changes in procedure and organization to be suggested to the White House for transmittal to Congress next year.

Mr. Cole held his first formal press conference just before opening the first conference of the series — a meeting with public interest and labor representatives.

At the July 7 session were Dr. Francis J. Brown and Allen B. Edwards, American Council on Education; Dr. Elmer W. Henderson and James E. Scott, American Council on Human Rights; Peter Henle and Bert Seidman, American Federation of Labor, Ben Fisher and John Edelman, CIO National Housing Committee; Bernard Weitzer, Jewish War Veterans of the YSA; John D. Lange, Oliver C. Winston, John Searles and William Slayton, National Association of Housing Officials; Rt. Rev. Msgr. John O'Grady, National Conference of Catholic Charities; Mrs. Olya Margolin and Mrs. Thomas Parsonette, National Council of Jewish Women Inc.; Lee F. Johnson and Ira Robbins, National Housing Conference Inc.; Philip Schiff and Samuel D. Gershovitz, National Jewish Welfare Board.

Edmund R. Purves, executive director of the American Institute of Architects, was among Mr. Cole's guests at the second meeting, on July 8. Others invited: John Haynes, managing director of the Producers' Council Inc.; Sam Neel and M. Brown Whatley, Mortgage Bankers Association of America; Herbert S. Colton and Joseph Meyerhoff, National Association of Home Builders; Calvin K. Snyder and Philip W. Kniskern, National Association of Real Estate Boards; H. R. Northrup and Norman Mason, National Association of Retail Lumber Dealers; Oscar R. Kreutz and Clifford P. Allen, National Savings and Loan League; F. Stuart Fitzpatrick and (in a second capacity) Norman Mason, U. S. Chamber of Com-

(Continued on page 268)





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The leader of these 24-inchers is the DFE-75. It has completely automatic defrosting in the Freezer; Shelves-in-the-Door, full-width Humidrawer, adjustable shelves and many other features which will appeal to your prospects.

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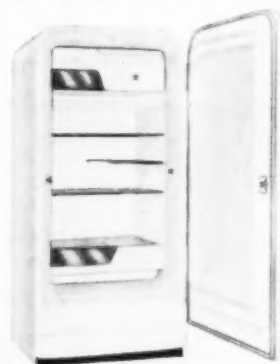
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DE-8—7.9 cu. ft. capacity. De luxe throughout.



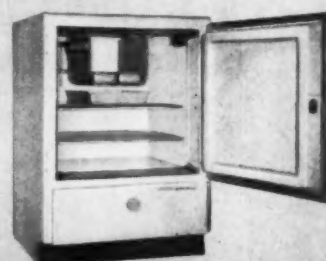
SE-8—Smart styling plus a full 8 cu. ft. of useful storage.



HE-8—8 cu. ft. capacity. Has special space-saving hinges.

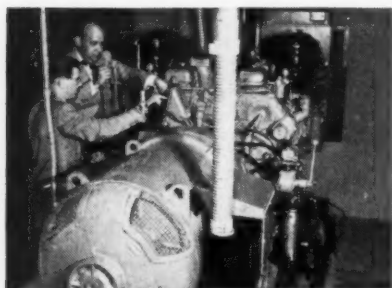


HE-6—6.2 cu. ft. capacity. Also has space-saving hinges.

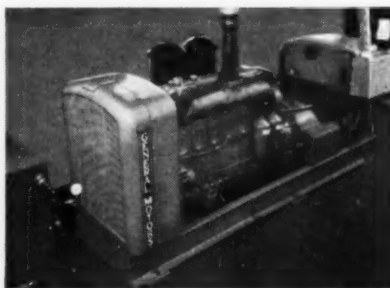


HE-4—4 cu. ft. capacity. For installation under standard height counter work surfaces.

# GM DIESEL *Stand-by* GENERATOR SETS



WJR—Detroit, Michigan, uses 200 kw. GM Diesel generator set as stand-by power for 50,000-watt transmitter. Compactness of unit permitted installation in garage adjoining transmitter building—eliminating cost of a specially designed building.



WKTV—UTICA, N. Y., uses a 100 kw. General Motors Diesel generator set for stand-by power. Set can be started remotely from the control room. Low vibration characteristic of engine permitted installation in room adjacent to transmitter and within 30 feet of studio.

If you are planning stand-by power, be sure to check the advantages of General Motors Diesel generator sets, listed briefly below. GM Diesel generators are meeting the exacting requirements of military service in all parts of the world. They supply emergency power for more than 1100 telephone and telegraph exchanges—for microwave relay stations, for hospitals, government buildings, banks, airports. There is a GM Diesel distributor near you who will analyze your power requirements and make his recommendations without obligation. Look in the yellow pages of your phone book for his listing, or write direct to us.

- Wide range of models—12 1/2 to 200 kw., 220 or 440 volts, single or three-phase current.
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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 266)

merce; and Stephen Slipper and K. M. Murphy, U. S. Savings and Loan League.

### President Asks Study

Mr. Cole, in an informal statement to the press, said he had no policy for the agency from the White House; that he had just been asked by the President to study all phases of the operation. He quoted from the President's letter: "It seems to me that the time is appropriate for a thorough and practical review of the present housing program of the Federal Government. I expect that such a review will develop for me a series of recommendations which will clearly identify the proper role of the Federal Government in this field, and outline the most economical and effective means possible for improving the housing conditions of our people."

From this springboard, Mr. Cole was launching the most exhaustive study in the history of the housing agency. "I'll study it as unbiasedly as a prejudiced man can," he remarked laughingly.

### Areas of Agreement Sought

Seriously, Mr. Cole was convinced he would uncover a greater area of agreement than had been indicated in recent years by open statement individually expressed. "I'm of the opinion that the areas of disagreement in housing are not as broad as most people believe them to be," he said. "We will try first to find the areas of agreement and see if they aren't greater than they've been thought to be."

Each conference, Mr. Cole explained, would take up three major topics in order—objectives, how these objectives can be obtained, and the role of the Federal Government in housing. In the meetings, the conferees talked first of functions and objectives, then organization and finally how to change present procedures to do a better job. Meetings were to be strictly off the record, but those attending were not bound to secrecy.

### New Staff to Run Study

HHFA was in the process of establishing a new staff to handle the study program after it got rolling. Slum clearance

(Continued on page 270)

When specifying roof insulation:

not **How Thick?**



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**How Thermal?** \*

\*Thermally efficient

Obtaining roof insulation results begins with "What is the thermal value of the insulation?" To answer this safely and consistently, specify Fiberglas<sup>†</sup> Roof Insulation. By all standards of comparison, Fiberglas Roof Insulation gives you dependable, proved-in-use performance that is far superior to most materials. It is made from one of the most efficient insulators known, fibers of glass.

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<sup>†</sup> Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.



Specify



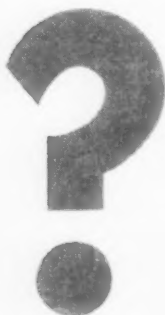
Roof Insulation

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Which and What kind of doors to use poses a problem with many architects. First, because so many factors must be considered — sound acoustics, noise control, punishment expectancy, warpage resistance, veneer face selectivity, fire resistance, maintenance, standard sizes, thickness, quality, beauty and many other factors important to good building construction. Thanks to HARDWOOD'S solid core doors, as well as doors for highly specialized functions, you can be sure of your specific choice — and stake your reputation with it. To assist you in finding the practical solution to your problems, HARDWOOD also offers counsel based on years of experience in manufacturing doors for most every type of use. Send us details of your problems for our suggestions — There's no obligation, of course.

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Sound Insulating Doors—



America's finest doorway closure for reducing noise penetration — insuring room privacy. Send for new FREE brochure describing RIVERBANK doors in "easy-to-understand" non-technical language.

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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 268)

and urban redevelopment were two phases of the whole housing effort that were up for further study. Mr. Cole said special outside groups would advise him and the President of new developments in these fields. He also made it plain that the study of housing activities in general would not stop with completion of the present two-month project: "We will constantly reexamine our activities."

Mr. Cole was vaguer on precisely what he expected the canvass to accomplish. He did say, however, that he expected it to "minimize political influence on housing programs." The reference was to a recent House subcommittee report which was highly critical of the Public Housing Administration's activities in California.

HHFA said the July meetings initiated a program of review and reexamination under which proposals developed in the shirtsleeve sessions would be given intensive and critical overall review by an advisory review committee to be appointed. The proposals were to cover program activities and policies and government organization of housing operations.

### BUDOCKS REPORTS SAVINGS IN NEW BUILDING METHODS

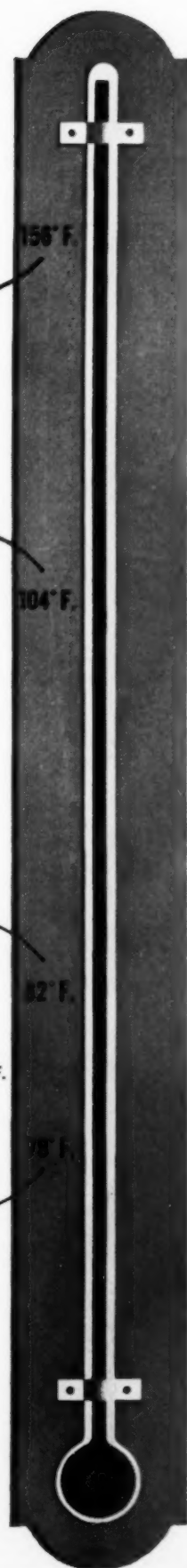
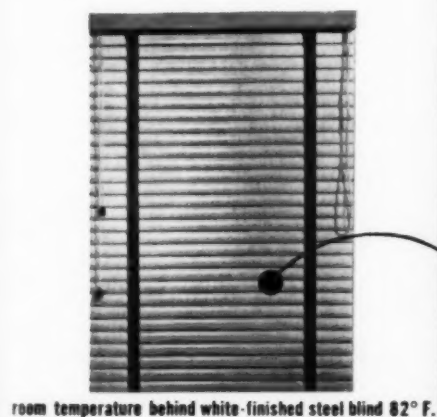
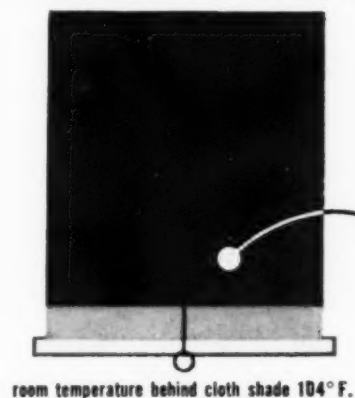
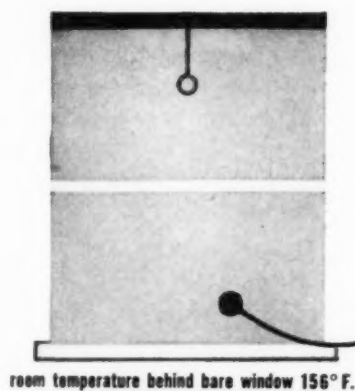
Through the influence of weather phenomena, the Navy's Bureau of Yards and Docks has been learning new methods of building construction.

Precast, tilt-up and push-up techniques have enabled the Bureau to save as high as 25 per cent on sidewall construction in one-story structures. In a specific instance, at Twenty-nine Palms, Calif., and Camp Pendleton, Ore., the precast and tilt-up methods were combined to effect a savings of 66 per cent in concrete construction. And typhoon conditions in the South Pacific have taught the Navy some lessons in wind resistance.

These matters were brought out in testimony recently given a House appropriations subcommittee by Rear Admiral Joseph F. Jelley, chief of the Bureau of Yards and Docks.

Members of the appropriations sub-

(Continued on page 272)



## no window covering controls temperature like the all-*Flexalum*. blind

An objective study by the Faber Birren Company\* shows: the all-FLEXALUM aluminum blind controls room air temperature more effectively than any other window covering—including venetian blinds made with other materials. An even more dramatic difference was obtained by measuring the surface temperatures of unfinished FLEXALUM aluminum and raw steel exposed to solar heat...the FLEXALUM reading was 19° F. lower. This study points to all-FLEXALUM blinds as an effective way to reduce heat.

only all-Flexalum blinds have all these long-life and low-maintenance advantages:



**Wipe-Clean Plastic Tapes**—Won't fade, fray, shrink or stretch.



**Spring-tempered aluminum slats**—Snap back to perfect shape. Won't rust, chip, crack or peel.



**Long-Wear Nylon Cords**—Won't fade or fray. Tassels are noiseless, unbreakable plastic.

\*Copies of this study available on request. Write for local Flexalum sources, free file of venetian blind information  
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## THE RECORD REPORTS

group wanted to know how the Bureau was progressing with its reinforced construction operation in the South Pacific and how costs had been cut in stateside operations.

During World War II, it was explained, the Navy erected Butler 40 x 100-ft buildings, or Quonset huts, designed only for wind velocities of 80 mph. It was known these would fail in

### WASHINGTON (Cont. from p. 270)

110-mph typhoons. New construction in this part of the world since World War II, however, has been of steel and concrete which the Navy believes can withstand a force of 110 knots or 125 mph.

Admiral Jelley explained that during the war Butler huts had to be erected as a calculated risk due to the steel shortage. In designing these, engineers de-

liberately cut down on the size of the members and lightened the sheet, hoping that they would not be subjected to typhoon winds. The Navy was lucky during that period, the spokesman said, for Okinawa was the only place it ran into trouble.

Since then, the newer-type structures have been tested in natural storms and found to hold up well. Admiral Jelley acknowledged that the housing could not be made absolutely storm-proof because the cost of doing so would be almost prohibitive. But he told Congress the Bureau had gone a long way in developing the right type of construction for the South Pacific region.

### Five Per Cent Savings Noted

As for cost savings in continental construction, Admiral Jelley said the reduction in normal concrete buildings had been approximately five per cent. "On the ordinary building most of your cost is in the roof structure and the cost of the side walls is about 20 per cent of the overall cost of the building," he said. "So . . . a 25 per cent saving in the side walls would reflect itself in a five per cent saving in the overall cost of the building."

The Bureau chief remarked that precast and tilt-up methods had permitted Navy to do things it would not have thought of under ordinary types of construction. For example, the California projects, a combination of precast and tilt-up, enabled the Bureau to lower the cost of its housing to the neighborhood of \$1000 per man in concrete construction. Conventional-type buildings were running as high as \$3000 per man.

Push-up construction was described by Admiral Jelley as having some very definite advantages too. Twenty-three ft seemed to be the height limit beyond which savings over more conventional systems could not be effected, Admiral Jelley agreed.

Again, he estimated a five per cent saving on the push-up construction, reflected principally in the labor. The carpenter who has to build the forms is a high-priced man, he explained. But where concrete is poured on the ground, the saving is in machinery and labor.

It was Admiral Jelley's belief that a better product results from the ground-poured and slab push-up method. It eliminates many of the tiny airholes which would be a source of weakness if they allow water to enter, he said.

(More news on page 274)

ST. LUKES  
LUTHERAN CHURCH  
MANHATTAN, KANSAS  
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RAMEY & HIMES  
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## IMPRESSIVE BEAUTY OF NATURAL MATERIALS

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"Rilco Arches allowed us complete freedom of design. The arches we chose were used to give a feeling of height in smooth, flowing lines.

"The natural wood of the arches and purlins gives a warm, pleasing feeling that blends with the brickwork and paneling of the chancel."

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Rilco Laminated Wood Products are

fabricated from selected West Coast Douglas Fir, and manufactured with modern precision equipment under rigid factory control. Rilco's experienced engineers will be pleased to consult with you about your requirements and give "on the job" cooperation. See our catalog (2b/Ri) in Sweets or write for complete information.

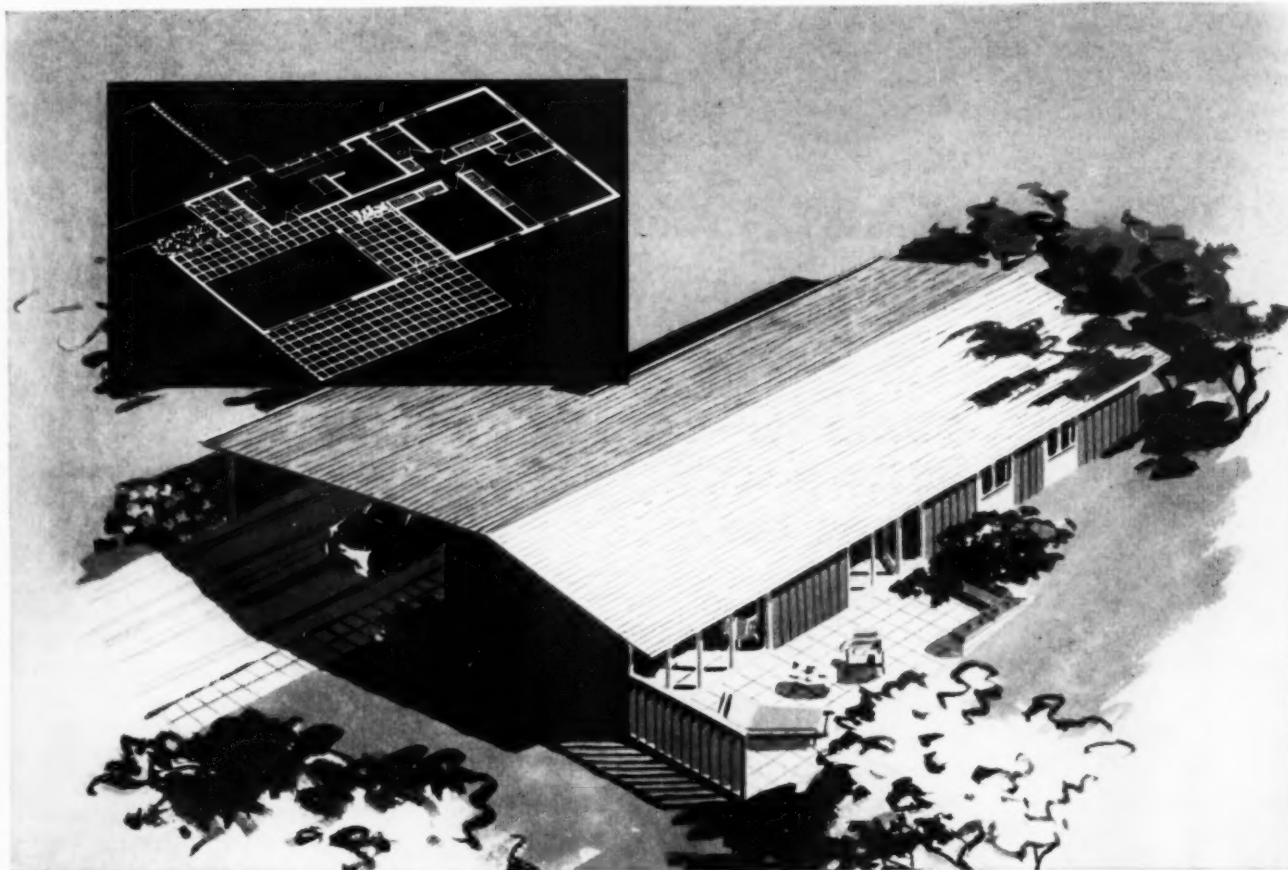


2518 First Natl. Bank Bldg., St. Paul, Minn.



# How G-E HEAT PUMP can affect home design

G.E.'s ALL-ELECTRIC year-round air conditioner offers architects new flexibility in home planning



**SLAB CONSTRUCTION** of this home, designed by George Cooper Rudolph Associates, will save excavation costs on rocky sites. Small, space-saving indoor air ducts for G-E Air-Wall\* System are imbedded in the slab. Outdoor air ducts are in the attic and take in air through end louvers.

**SIMPLICITY** in design and construction of this home is made possible by the G-E Heat Pump's completely automatic, all-electric year-round air conditioning.

**NO CHIMNEY—NO FIREPLACE.** G-E Heat Pump makes them unnecessary. Central utility room needs no ventilation.

**FIXED SASH** allowed by heat pump cuts initial costs, helps keep out dust and reduces maintenance.

**NO FUEL—NO WATER.** The G-E Heat Pump cools in summer without water so no cooling tower is required, and it heats in winter without burning fuel.

**AVAILABLE** now in the south, southwest, and on the west coast—other locations as soon as distribution and service facilities are established.

**FOR MORE INFORMATION** send for your copy of G.E.'s "Architect's Guide to the G-E Heat Pump." See how the heat pump gives you more freedom in designing year-round comfort into homes and small commercial buildings.



**GEORGE COOPER RUDOLPH, A.I.A.,** says: "In designing this and other heat pump homes, my associates and I were impressed most by the almost infinite design flexibility afforded by the heat pump. Quite difficult orientation and site problems were easily solved by its use. We found that the heat pump, especially when coupled with the G-E Air-Wall system, gave us unusually precise control over the total interior comfort of the home."

## GENERAL ELECTRIC

**Mail Coupon Today!**

General Electric Company, Air Conditioning Division,  
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☐ Please send me the "Architect's Guide to the G-E Heat Pump" and other heat pump literature.  
☐ Also include technical data on the G-E Air-Wall system.

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## HEAT PUMP

All-Electric Year-Round Air Conditioner

\* Reg. Trademark of G. E. Co.

## THE RECORD REPORTS

(Continued from page 272)

### ON THE CALENDAR

*Aug. 11-Sept. 27:* An exhibition of furniture by Thonet, marking the 100th anniversary of the New York branch — Museum of Modern Art, 11 W. 53rd St., New York City.

*Aug. 24-Sept. 4:* Special Summer Program in Noise Reduction — Massachusetts Institute of Technology, Cambridge 39, Mass.

*Aug. 24-Sept. 4:* 15th Annual Seminar on City and Regional Planning — Massachusetts Institute of Technology, Cambridge 39, Mass.

*Aug. 31-Sept. 3:* Annual Convention, American Hospital Association — San Francisco.

*Sept. 14-18:* National Technical Conference, Illuminating Engineering Society — Commodore Hotel, New York.

*Sept. 17-19:* Gulf States Regional

Conference; theme, "Serving the People of the South through Architectural Progress" — Biloxi, Miss.

*Sept. 18-19:* Annual convention, Pennsylvania Society of Architects; Central Pennsylvania Chapter, A.I.A., hosts; theme, "Research — and Things to Come" — Lancaster, Pa.

*Sept. 17-27:* National Furniture and Homefurnishings Show — Grand Central Palace, New York City.

*Sept. 18-19:* Meeting of Great Lakes Regional Council — Statler Hotel, Detroit.

*Sept. 21-27:* 3rd U.I.A. Congress — Lisbon, Portugal. Details obtainable from Union Internationale des Architectes, 15 Quai Malaquais, Paris.

*Sept. 23-Nov. 29:* Good Design. Selections from the 1953 exhibition in Chicago — Museum of Modern Art, 11 W. 53rd St., New York City.

*Sept. 29-Oct. 2:* National Electrical Industries Show — 69th Regiment Armory, New York City.

*Sept. 30-Nov. 22:* State Department Architecture. Models, drawings and photographs of approximately eight buildings in Europe — Museum of Modern Art, 11 W. 53rd St., New York City.

*Oct. 4-25:* Exhibition of "Contemporary Swiss Architecture," assembled by Alfred Roth — Addison Gallery of Art, Andover, Mass.

*Oct. 5-7:* Fall meeting, American Association of Mechanical Engineers — Hotel Sheraton, Rochester, N. Y.

*Oct. 5-9:* Semiannual Conference, Society of Motion Picture and Television Engineers — Hotel Statler, New York City.

*Oct. 5-9:* National Hardware Show — Grand Central Palace, New York City.

*Oct. 6-8:* Fourth Industrial Electric Exposition — William Penn Hotel, Pittsburgh.

*Oct. 6-9:* Second Annual International Churchman's Exposition — Coliseum, Chicago.

*Oct. 8-9:* American Council on Education — Washington, D. C.

*Oct. 8-10:* Convention of New York State Association of Architects — Lake Placid Club, Lake Placid, N. Y.

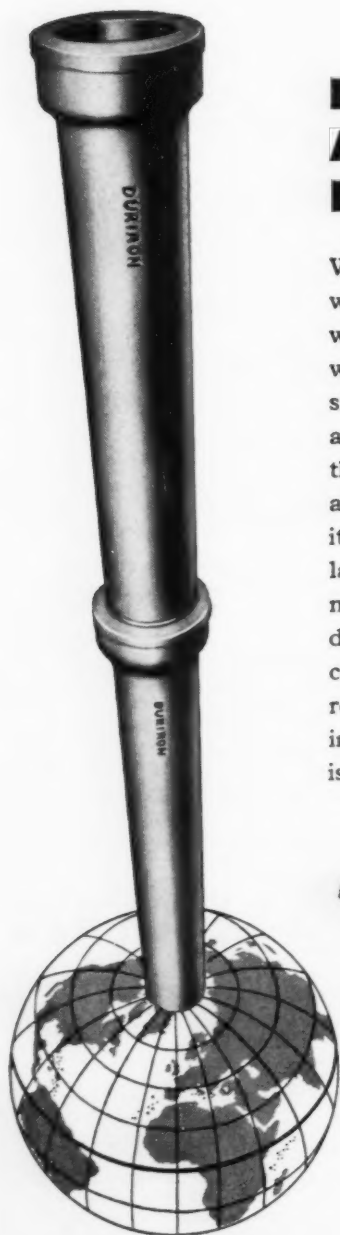
*Oct. 11-16:* 83rd Congress of Correction, American Prison Association — King Edward Hotel, Toronto, Ont.

*Oct. 14-16:* Annual convention, Architects Society of Ohio — Youngstown, Ohio.

*Oct. 14-17:* Convention of the California Council of Architects — Coronado Hotel, San Diego, Calif.

(Continued on page 276)

## DOWN-TO-EARTH solution for corrosive waste disposal



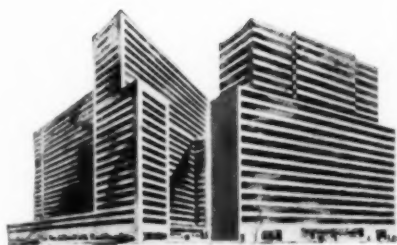
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HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885





## THE RECORD REPORTS

(Continued from page 274)

Oct. 19-21: 35th Annual Meeting, American Standards Association — Waldorf-Astoria Hotel, New York City.

Oct. 25-27: Fall meeting, Prefabricated Homes Manufacturers Institute — Hotel Shamrock, Houston, Tex.

Oct. 26-29: Annual convention, American Gas Association — Kiel Auditorium, St. Louis.

Oct. 29-30: Southwest Regional Meet-

ing, American Concrete Institute — Rice Hotel, Houston, Tex.

### OFFICE NOTES

#### Offices Opened

• Thomas R. Merideth has announced the opening of an office for the practice

of architecture in the Bossier Bank Building, Bossier City, La.

• Arthur O. Reddemann, A.I.A., and Kenneth I. C. Knudson, Architect, have announced the opening of offices at 3420 West Center Street, Milwaukee 10, Wis. The firm will be known as Reddemann-Knudson.

#### New Firms, Firm Changes

• The firm of Jordan C. Ault and Associates, 604 East Goodwin Avenue, Victoria, Tex., will be known by the name Jordan C. Ault and Robert Rick.

• Charles Burchard, for the past five years an assistant professor of architecture at Harvard University, has joined the firm of A. M. Kinney, Inc., as director of architecture. The firm is located at 2905 Vernon Place, Cincinnati 19, Ohio.

• Carlos L. Calderon has become a partner in Visioneering, a new architectural and design firm of St. Petersburg, Fla. Mr. Calderon was formerly a designer with Allied Stores and with Raymond Loewy Associates.

• The architectural firm of Edward A. L. Cox, A.I.A., of Camden, N. J., has announced the opening of a branch office at 958 Camelback Road, Phoenix, Ariz., under the direction of Mr. Cox. Martin Guttman, Architect, will direct the Camden office, at 709 Market Street.

• J. Whitney Cunningham, A.I.A., J. Franklin Clark Jr. and Frank B. Poole Jr. have formed a partnership for the practice of architecture. The firm will be known as J. Whitney Cunningham, Clark and Poole, and will have offices at 108 Jackson Street, Kingstree, S. C.

• John Walker Little, Architect, has joined the engineering firm of Fischer & Associates, 5209 Euclid Avenue, Cleveland 3, Ohio.

#### New Addresses

Henry Steinbomer, Architect, 907 Travis Building, N. St. Mary's at Travis, San Antonio, Tex.

Joe E. Ward, Consulting Engineer, 1608A Monroe Street, Wichita Falls, Tex. Mailing address: P. O. Box 3157.

Elroy Webber, A.I.A., 57 Pearl Street, Springfield, Mass.

(More news on page 278)



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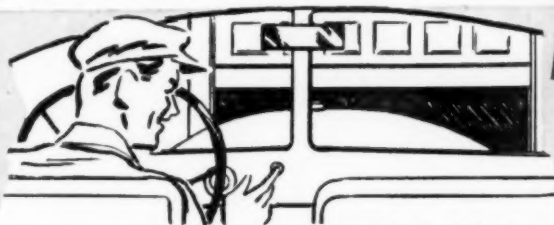
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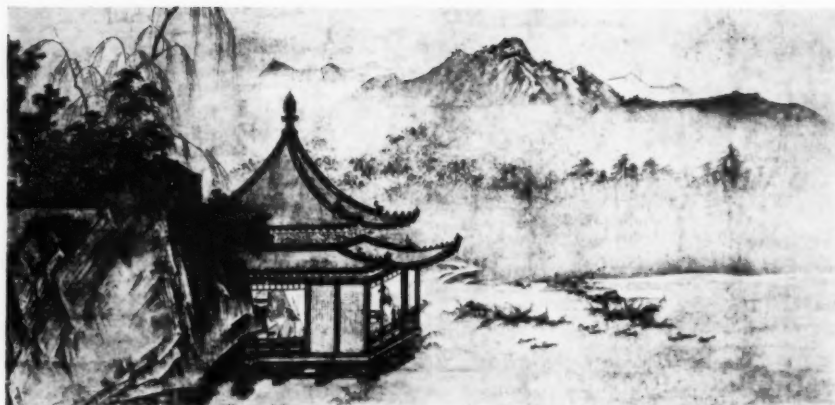
## THE RECORD REPORTS

(Continued from page 276)

### JAPANESE PAINTING AND SCULPTURE SEEN HERE

#### Show Tours Five U. S. Museums

The most extensive exhibition of painting and sculpture ever to leave Japan is currently on view in the United States, where it will tour five



This 16th Century landscape by Kano Motonobu is a hanging scroll. It is painted on paper with sumi, a carbon ink, and has slight coloring. The Kano school combined traditional Japanese style with Chinese-derived elements

museums before returning to its native shores. Among other things, the show affords U. S. architects and art lovers the best chance they have had to experience directly the art which has permeated, reflected and helped shape Japan's architecture (whose far-reaching influence in this country was the subject of a major seminar at the convention last month of the American Institute of Architects).

Comprised of treasures lent by the government of Japan, the show has already been seen at the National Gallery in Washington and the Metropolitan Museum in New York, and it is currently at the Seattle Art Museum until August 9. From Sept. 15 to Oct. 15 it will be at the Art Institute of Chicago, and from Nov. 15 to Dec. 15 it will be on view at the Museum of Fine Arts in Boston. Included in the collection are scroll paintings, painted screens, and sculptures in wood, lacquer and gilt-bronze. These span a period of 13 centuries, beginning with the Heian period, 794-1185 A.D., and extending through the Edo period, 1615-1867.

Culled from national, religious and private collections, the exhibit includes many pieces classed as National Treasures. One of the items is a pair of wood folding screens lent by His Majesty, the Emperor of Japan. The show was assembled under the auspices of the Japanese Commission for Protection of Cultural Properties, Tokyo, which made the selection in collaboration with a committee representing the American museums. The paintings and sculptures were transported to this country by the United States Navy.

(Continued on page 280)

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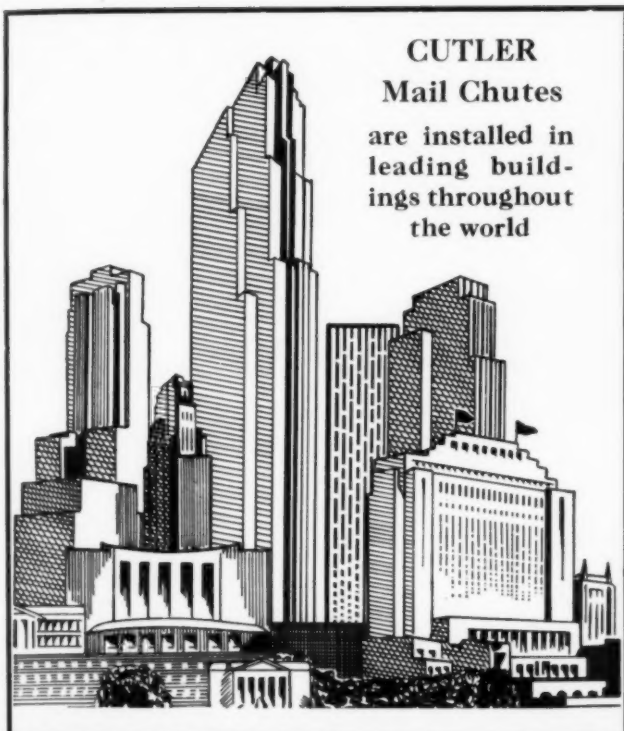
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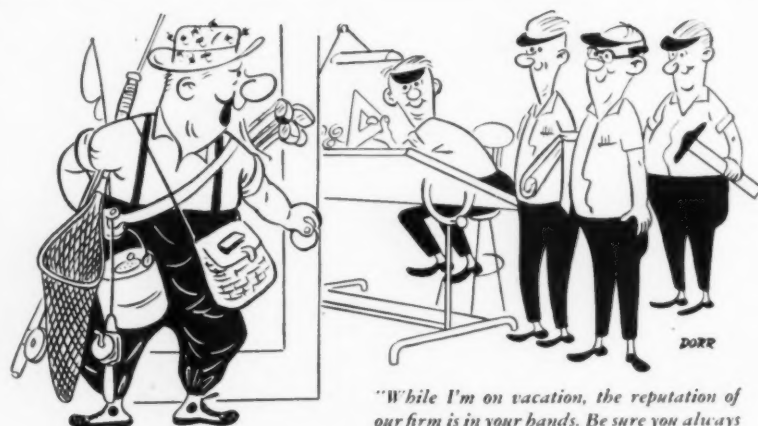
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African Mahogany . . . Knotty Pine . . . Sapeli . . . Special logs  
for special places.

## THE RECORD REPORTS

(Continued from page 278)

Right: "Pine Trees in Snow," one of a pair of six-fold screens painted in sumi and faint colors on gold paper. It is by Maruyama Okyo and dates from the 18th Century. Right, below: Kan-zan, a poor, carefree and probably legendary Chinese Buddhist priest, was depicted in 14th Century by Kao. Paper scroll (detail) is painted in sumi

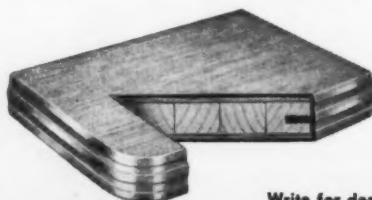


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Below: "Scroll of Animals" (detail), set of four 12th Century scrolls showing animals in satirical imitations of human behavior. It is generally attributed to Kakuyu, a priest-painter, but without proof. It is painted in sumi



(Continued on page 282)

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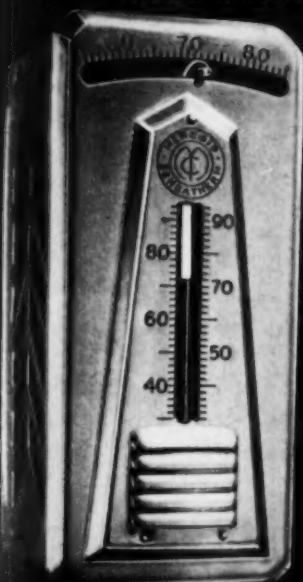
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## THE RECORD REPORTS

(Continued from page 280)

Near right: Thunder God (detail), humorously depicted by Tawaraya Sotatsu in early 17th Century on gilded-paper two-fold screen, painted in colors. Far right: a 17th Century beauty, portrayed in colors on paper scroll by painter-printmaker Hishikawa Moronobu



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Above: winter landscape by Sesshu is a 15th Century scroll, painted in sumi. Below: statue of a seated Buddha (detail), dates from Eighth Century. Both carved and modelled in wood and lacquer, it is by an unknown artist



(More news on page 292)

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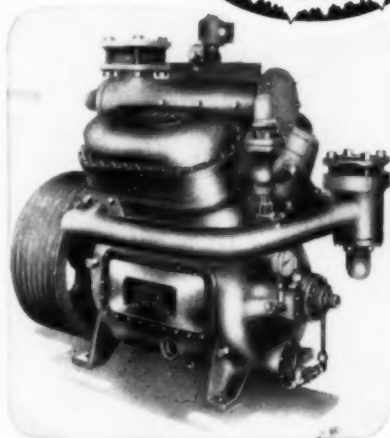


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## A.I.A. CONVENTION

(Continued from page 10)

convention, by Pietro Belluschi, dean of the School of Architecture and Planning at Massachusetts Institute of Technology, whose subject was "A New Architecture."

Like all those of recent years, the convention itself was a combination of technical conference, esthetics forum, annual business meeting and — last but by no means least — fraternal reunion. On the program there were seminars on wood and its uses, on condensation in buildings, on the liturgical arts, on Oriental influence on Ameri-

can art and architecture; there were special meetings on such problems as civil defense, the relations of architects with the home building industry, architectural public relations, and the preservation of historic buildings; there were business sessions at which delegates, besides transacting routine Institute business, approved resolutions (1) setting up a prototype committee to work with manufacturers of building materials on the formulation of basic criteria applicable to one type of building product, (2) protesting the proposed

establishment in the Federal government of a national fine arts commission, and (3) urging removal of the "temporary" (since World War I) buildings along the Mall in Washington, D. C., and restoration of the Mall to its original purpose according to the L'Enfant plans. New officers were elected and installed, with Clair W. Ditchy of Detroit succeeding Glenn L. Stanton of Portland, Ore., as president (see ARCHITECTURAL RECORD, July 1953, page 16, for complete list of new officers and directors); the 1953 National Honor Awards for Architecture were selected and presented, with highest honors going to Saarinen, Saarinen & Associates, Cranbrook, Mich., and to William Henry Dietrick, Raleigh, N. C., for the North Carolina State Fair Pavilion, Raleigh, N. C., designed in collaboration with the late Matthew Nowicki and Severud-Elstad-Kreuger, engineering consultants, of New York City; the 1953 Gold Medal for Architecture, highest honor of the A.I.A., was awarded (in absentia) to William Adams Delano, F.A.I.A., of the New York architectural firm of Delano & Aldrich; and 30 members of the A.I.A. (see AR, May 1953, page 12) were elevated to Fellowship in the Institute. The official social agenda included the traditional President's reception, a dinner-dance-cabaret, a cocktail party given

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M. Edwin Green, Harrisburg, Pa., admonishes a not very intimidated trio — Mr. and Mrs. Kenneth Sargent, Syracuse School of Architecture, and Linn A. Forrest, Juneau, Alaska, A.I.A.

by the Washington State (host) Chapter, and the Institute's annual banquet. For anybody with time on his hands, there were seven exhibits at the convention hotel and nine more at scattered locations throughout Seattle; and for those who couldn't bear to go home there were a "post-convention special" train east via San Francisco, Yosemite National Park, Los Angeles, Riverside

(Continued on page 286)



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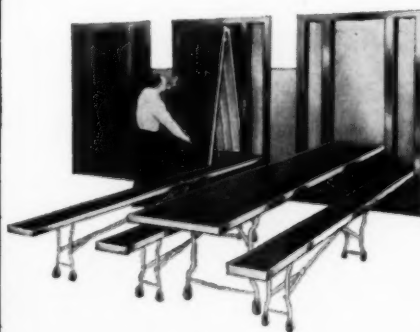
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## A.I.A. CONVENTION

(Continued from page 284)

and Grand Canyon and two post-convention tours — one to Alaska and one to Hawaii.

Architect interest in the home building field was doubly emphasized at this year's convention, with development housing for the first time made a category in the National Honor Awards program and a special session devoted to the architect and the operative builder. The session heard a report

from the A.I.A.'s three-year-old Committee on the Homebuilding Industry which outlined its efforts to find ways in cooperation with the National Association of Home Builders for more architects and builders to work profitably together. In a recent survey of its more than 9000 members, the A.I.A. was able to find only 54 who could be said to have done "extensive" development work.



Ford

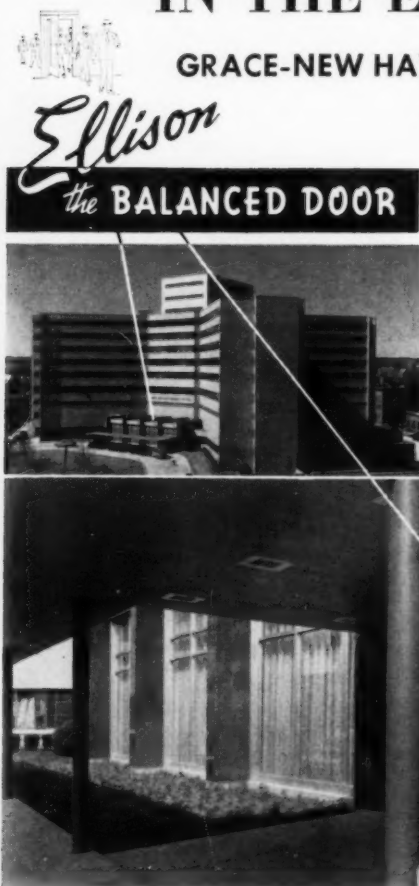
Richard Drover, Phoenix, and Colorado A.I.A. President James Hunter, Boulder

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On the technical side, new uses of wood and wood products were forecast by building products manufacturers and researchers, whose testimony followed reports by forestry experts that more and more wood will become available in years to come as the fruit of forest conservation practices initiated a half century ago when U. S. forest resources were threatened with virtual extinction through long uncontrolled exploitation. Such new products now in the development stage include, for example, a sandwich-type plywood panel intended specifically for project housing. The panel, to be 2 to 2½ in. thick, will have a core of paper honeycomb, resin-impregnated for stiffness and durability, and faces of either three-ply Douglas fir panels of standard grade or panels with decorative possibilities.

Sandwich-type structurals — in fiber and aluminum as well as wood — were cited as holding increasing promise for the building industry. Assistant Director L. J. Markwardt of the U. S. Forest Products Laboratory of Madison, Wis., reported on a prototype "sandwich" house that has been exposed to the weather at the Madison laboratory for four full seasons and still is in excellent condition.

Condensation in buildings, an increasingly pressing problem as new materials are used (and in new combinations) to build ever tighter structures, was discussed in a session moderated by Leonard G. Haeger, A.I.A., technical director of the National Association of Home Builders. Director Elmer Queer of the Engineering Research Station, College Station, Pa., listed a number of design practices that will help control the condensation problem, but warned that much research is still needed before either causes or controls of condensation will be thoroughly understood.

(Continued on page 288)

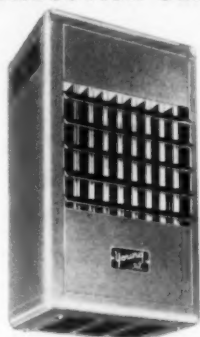


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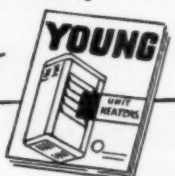
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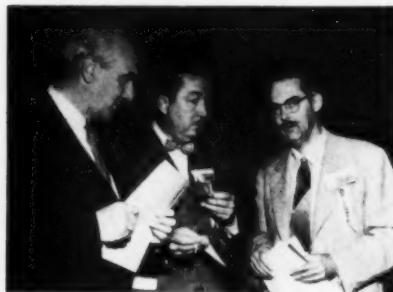
## A.I.A. CONVENTION

(Continued from page 286)



North Carolina State's architecture dean, Henry Kamphoefner, with Martin S. Kermacy, Texas U., and A. B. Swank, Dallas

In exceptionally dubious mood: Chicago's Lawrence Perkins, Harris Armstrong of St. Louis, and Morgan Yost of Kenilworth, Ill.



All photos by Forde



The outgoing president (center) with retiring regional directors John Richards (far left) and Irving Smith (far right). Mr. Stanton has new first vice president (old second) Norman Schlossman of Chicago on his left, Louis C. Rosenberg of New York on his right



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Jovial group at Honor Awards Exhibit: Robert Wilmsen, Eugene, Ore.; Mrs. Wilmsen; Edla Muir, Ellensburg, Wash.; John Landon, Los Angeles



New York's Francis Keally with Regional Director Thomas Harmon, Columbia, S. C.



More Simpson logging tour picnickers: Mr. and Mrs. Munz, Mr. and Mrs. Henry Wright and Mrs. U. F. Rible, all Los Angeles

(Continued on page 290)



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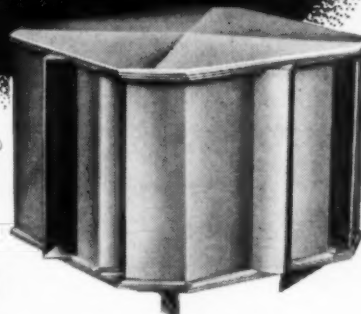
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## A.I.A. CONVENTION

(Continued from page 288)



Party group: Mr. and Mrs. William Weiner, Shreveport; Van Evera Bailey, Portland

All photos by Forde

Again at the Honor Awards Exhibit: Philip E. Keene, Pullman, Wash.; John Mahoney, Seattle



Mr. and Mrs. H. J. Overturf of Seattle with Milton A. Ryan of San Antonio

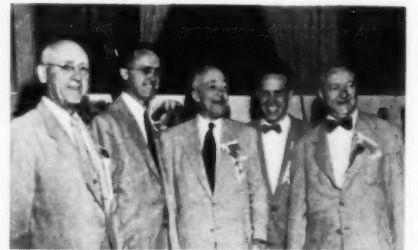
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Baltimore contingent: Lucien Goufreau, Paul Goudreau, Howard Hall, Grinnell Locke and T. Worth Jamison Jr.

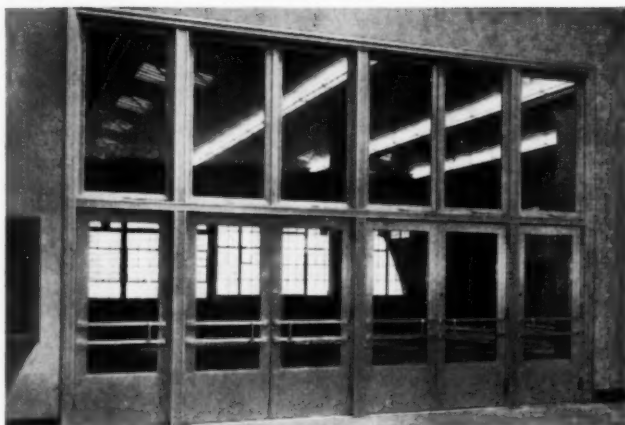


Wish we knew what they're admiring — A. Quincey Jones, Los Angeles; Texas architecture dean Harwell Harris; Robert Little, Miami; and Frederick E. Emmons, Los Angeles



On the edge of Mason Lake (where the Simpson picnic was): the new chief, Clair Ditty, with John L. Grand (left), Gainesville, Fla., and Edward A. Moulthrop, Atlanta





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## THE RECORD REPORTS

(Continued from page 282)

### FIFTH PUBLIC SCHOOL IS BUILT FOR PARK FOREST

Mohawk Elementary Public School, fifth public school to be built in Park Forest, the planned community 20 miles from Chicago's Loop, is scheduled to be opened next fall.



The fifth public school for Park Forest, the planned community near Chicago, is the Mohawk Elementary School, scheduled to be completed next fall. Cost: \$400,000

## SIZE Is Not the Measure of a DOOR

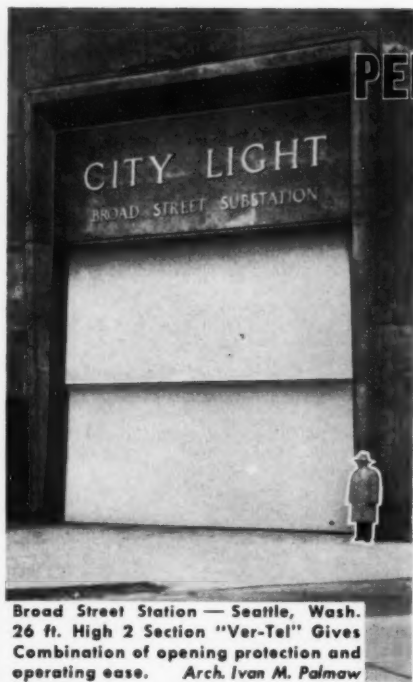
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The school, to cost about \$400,000 in land, buildings and equipment, will be a one-story structure of brick and stone with 16 classrooms — 14 for grades one through six and two for kindergarten.

Classrooms are designed as self-contained units, each with its own lavatory, drinking fountain, toilet, wardrobe spaces, book shelves and storage closets. In addition, each will have its individual exit into its own play area.

Plans call for several rooms for administrative purposes; a teachers' study which can double as a speech correction room during the day and be available for Parent-Teacher Association and other meetings after school hours; and a small room for bookstacks adjoining a classroom which could be converted to library use.

Broad windows extend the entire length of the building, for maximum daylighting, and the overhanging roof has been designed to permit the windows to remain free of blinds or shades throughout the greater part of the year. Fluorescent lighting will be used throughout.

#### Land Given by Developers

The school is being built on land donated by American Community Builders Inc., developers of Park Forest. It is being financed through a not-for-profit building foundation, and it is expected that School District 163 will purchase the school from the foundation when it has gained sufficient bonding power. The school will accommodate about 540 pupils.

Loebl, Schlossman and Bennett, planners of Park Forest, are the architects.

(More news on page 294)

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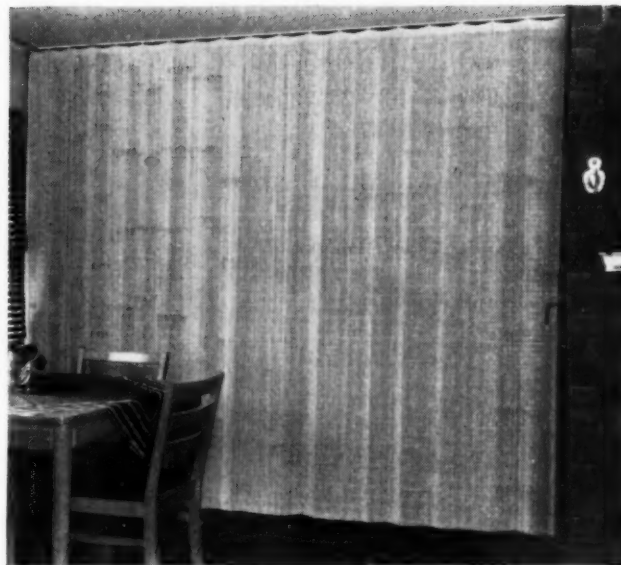
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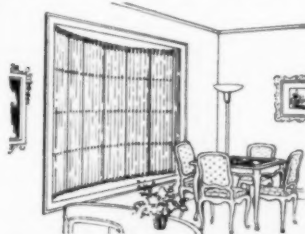
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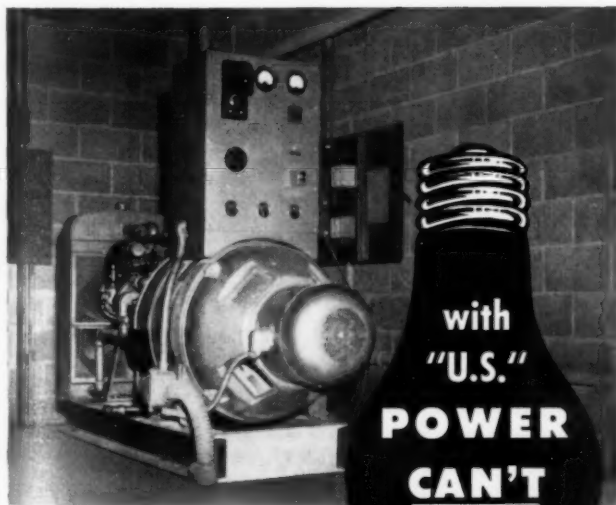
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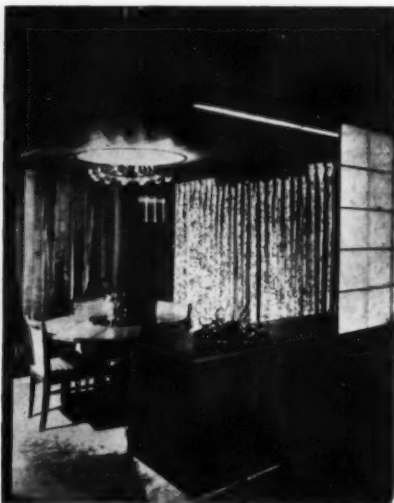
TOWN \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

**THE RECORD REPORTS**

(Continued from page 292)



Highest honors for architectural interiors. Below: William Wachsman design of dining room for Chicago house has walls and ceiling of walnut. Above: Milton Horn's basswood carvings for Blythe Park School, Riverside, Ill., Perkins & Will, architects



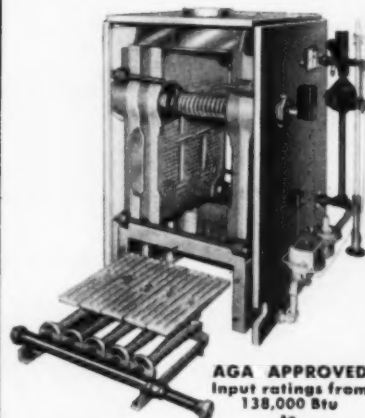
**NEW PROGRAM HONORS  
DESIGNS IN HARDWOOD**

Twenty-four awards were made in the 1953 edition of a new program to be sponsored annually by the industry-wide Hardwoods Exhibit Committee. Each year the hardwood industry will award "Design in Hardwood" Certificates to designers for outstanding designs of hardwood furniture, interiors and miscellaneous items; and five new products and designers will be honored by representation in the Designers' Section of the permanent Hardwood Exhibit of Chicago's Museum of Science and Industry.

This year's Certificates of Award for Highest Honors in their design classifications went to Paul McCobb and William P. Wachsman in the furniture design classification; Milton Horn and Mr. Wachsman in the architectural interior

(Continued on page 296)

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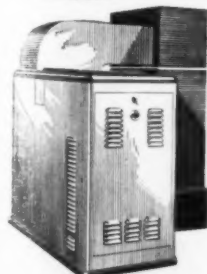
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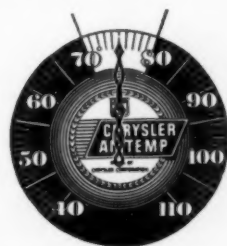
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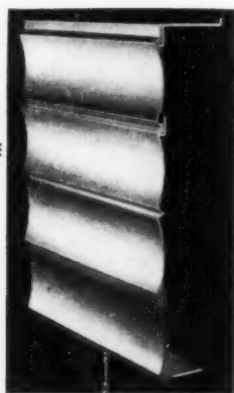
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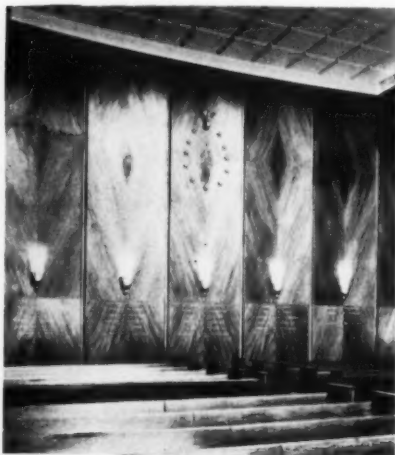
## THE RECORD REPORTS

(Continued from page 294)

design classification; and George Nelson in the industrial product design category, which included novelty and miscellaneous items.

In addition, 19 honorable mentions were awarded: Ico Tarisi, William Millington, Owosso Manufacturing Company, Cedric Errol Millsbaugh, Paul McCobb, Heritage-Henredon, Finn Juhl and T. H. Robsjohn-Gibbings, in the furniture classification; Lawrie & Green, Schick Johnson, Donald B. Goodman, Mark D. Feinkopf, Harley Melzian, Harper Richards, Lionel C. Algoren and Dorothy M. Kallio in the interiors classification; and Forest Wilson, Paul McCobb and William G. Pollack, in the product design classification.

The five-man jury for the program included Philip Will Jr. of the Chicago architectural firm of Perkins & Will, president of the Chicago Chapter of the American Institute of Architects. There were 321 entries.



Honorable Mention, architectural interiors. Above: mahogany-paneled courtroom, Dauphin County Courthouse, Harrisburg, Pa., Lawrie & Green, architects; below: executive office, Abbott Laboratories, Chicago, has walnut plywood walls, walnut desk, Harper Richards, architect



(Continued on page 300)



Webster Walvector stops down-drafts in modernized Garfield School, Maywood, Ill. Heating installation by Tropf Heating & Ventilating Co., Inc., with the approval of Chiaro & Chiaro, Architects and Engineers, school architects.

## New School Building from Old

Maywood, Ill. . . . Public school officials here have extended the usefulness of the old section of the 53-year-old Garfield School by comprehensive modernization. Outstanding feature was replacement of obsolete hot air system with Webster Walvector.

Rejuvenation of the old section of the Garfield School in 1951 involved such things as fresh, light-colored paint, sanitary asphalt floor tiles and modern, movable desks. These improvements would not have been long-lasting with the obsolete duct-type hot air system. Hence, Webster Tru-Perimeter Heating and Webster Walvector were vital to the plan.



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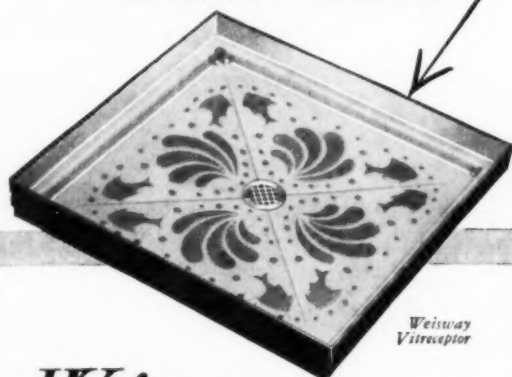
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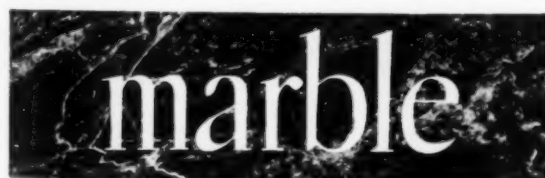


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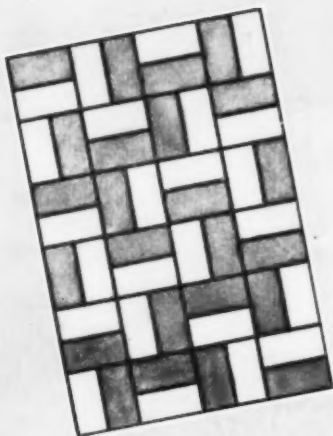
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## THE RECORD REPORTS

(Continued from page 296)

### DOWNTOWN ATLANTA GETS 25-STORY BANK BUILDING

Construction got under way this June for the only large office building to be built in downtown Atlanta since 1930. The 25-story building, main office of the Fulton National Bank, will contain 527,000 sq ft of office space, the greatest area of any office building in the city. The architect for the building is Wyatt C. Hedrick, in association with the firm of Moscovitz, Wilner & Milkey.

The bank will feature four drive-in tellers' windows on the street level, with room enough for eight cars indoors; the remainder of the ground floor will be taken up by the bank's installment loan department, their day and night depository facilities, and by shops. The bank's main business room will occupy the second floor; moving stairways will be installed for easy access. The third floor will be used for the trust department, the fourth and fifth for various other departments. The bank will rent the sixth and seventh floors, earmarked for future expansion, on short-term leases. The other floors are intended for office rental.

Situated in the center of the city's business district, the new building will help to relieve Atlanta's traffic problems by providing three levels of underground parking.



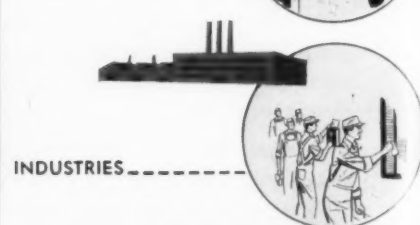
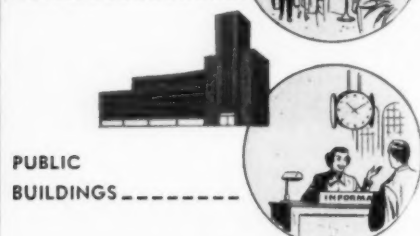
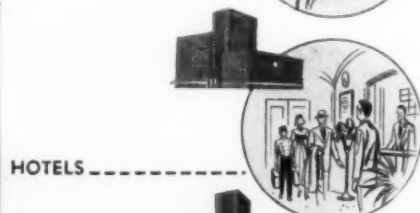
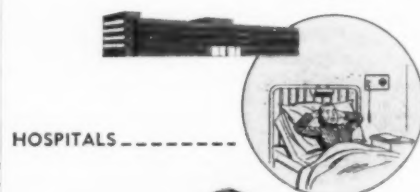
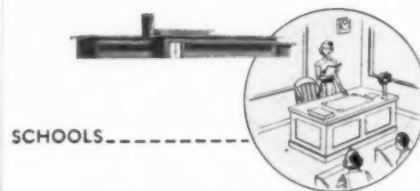
The building, of steel and concrete construction, will be the tallest building in the city. The electric display signs will be visible for many miles around.

(More news on page 304)

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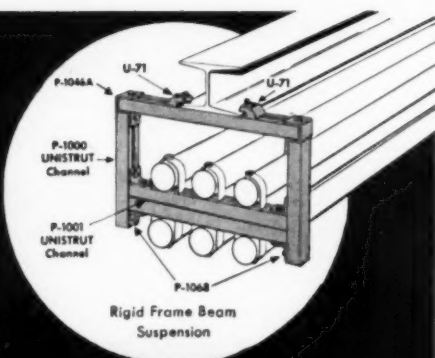


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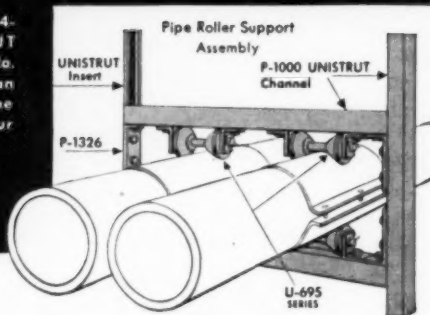
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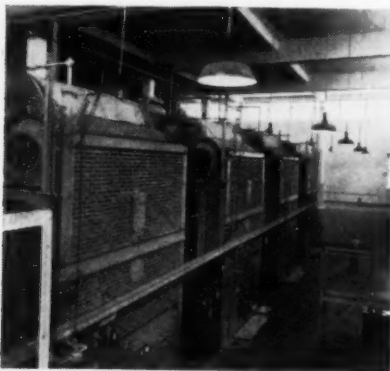
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**THE RECORD REPORTS**

**British Architects**

(Continued from page 16)

150 schools with his own system of prefabrication, discussed control of expenditure and group working. Mr. S. H. Loweth, another county architect, described his system of working with private architects and Mr. F. R. S. Yorke, a private architect, stressed the difficulties of working for several authorities with slightly varying systems of administration. He also dealt with the perennial problem of ensuring an even flow of work and a steadily occupied staff in the private office.

A novel feature of the Conference was an off-the-record discussion. This had been suggested by the president, Howard Robertson, so that architects could "let their hair down." The national press was excluded and the technical press agreed to publish a summary with no names mentioned. Contrary to expectations, this discussion produced no fireworks, not even on the ever-hot subject of official versus private practice, but when time was up there was still a considerable line-up of would-be speakers at the microphone.

Of course no gathering of architects can be held without visits to buildings, new and old, and these were a great success, the southeast corner of England being specially rich in good examples of both. Equally happy were the two receptions, the first being an informal one to allow members to get to know one another and the second an official one given by the Mayor of Folkestone. Everyone agrees that the most valuable part of a conference takes place 'round coffee tables and at bars.

There were two novel features, a service held in Canterbury Cathedral at which the president read the lesson and a special "Architects' Collect" was recited, and a garden party in the 600-year-old St. Augustine's Abbey, now restored after being bombed, and being used as a training college. Rain caused most of the garden party to be held in a spacious crypt 'round the refreshment tables. The conference ended with a dinner, held appropriately enough in the hall of a large new girls' school, the chair being occupied by the president. One of the speakers was Mr. R. Schofield Morris, president of the Royal Architectural Institute of Canada.

About 470 members attended the Conference, among them Mr. R. S. Kastendieck, A.I.A., and Mrs. Kastendieck, who were on a visit to Britain.

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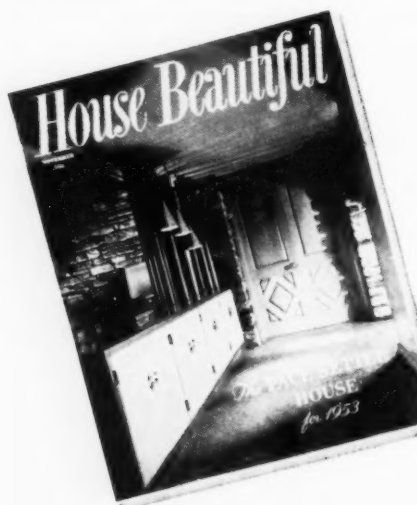
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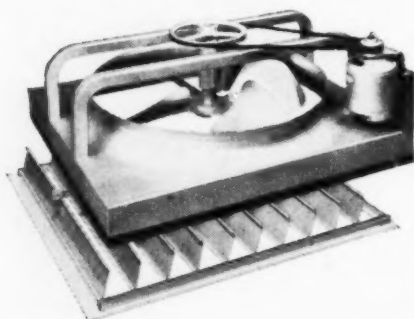
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## REQUIRED READING

(Continued from page 18)

and as they have sometimes been designed in complete groups. Outlying (detached) shopping centers are not included in the discussion.

Part Three, Industry, is concerned with the relationship of factories to towns, stressing their importance as the chief economic base of urban living. As for heavy industry not much can be done to tame it but architects can help organize it. "The industrialist is now accustomed to the idea that his works will be more efficient if they are laid out to a predetermined plan, and the chaotic appearance of the early steel works, which just grew, is unlikely to occur in the future. The plan will produce some semblance of order and unity. This, when carried out in three dimensions, will have, through the character of the industrial plant, a splendid scale and an almost savage grandeur which need to be humanized through the architectural qualities of the buildings."

Light industry is treated mainly as groups of factories in "trading estates" with cheap space available for small business. These groups are generally provided in connection with new towns in England. Techniques of layout are quite thoroughly covered.

Part Four, Housing, is considered first in generalized terms as neighborhoods (as designed for new towns) and then as layouts of groups. Layouts with Houses and Layouts with Flats are each given a full chapter, while Mixed Housing Development (recognized as desirable, but little practiced) is briefly presented. In the analysis section of Part Four, several 18th and 19th Century examples are studied.

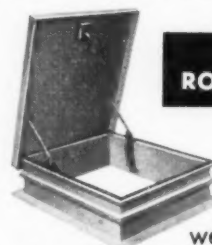
There has been a big gap in the literature of architecture and planning which has been troubling many architects concerned with this combined field. This book is wonderfully successful in filling the gap — tying together planning and road layout and design and civic art and housing under one unifying concept. Closely related to the economic realities, it is both theoretically solid and esthetically revealing and makes a strong contribution toward better urban living in the future. That the book is handsome is a foregone conclusion since it bears the imprint of The Architectural Press but we have Frederick Gibberd to thank for the close teamwork between words and pictures.

(Continued on page 312)

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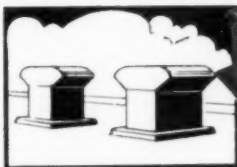


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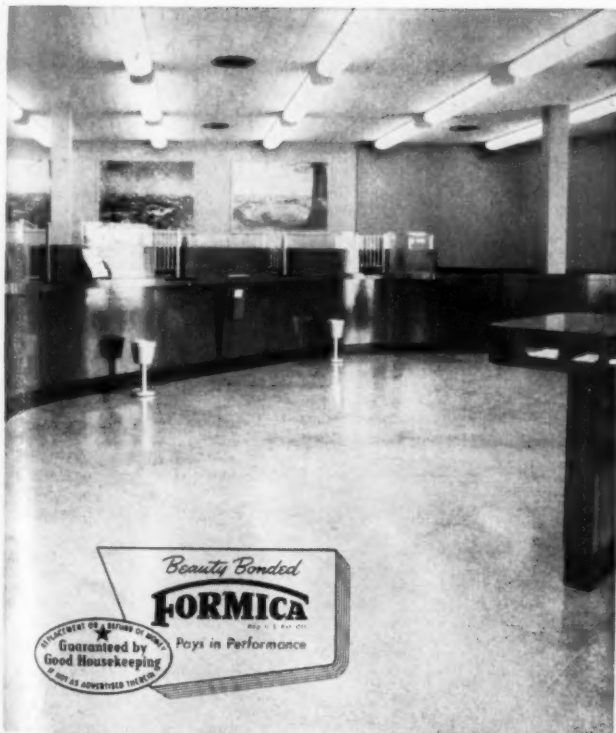


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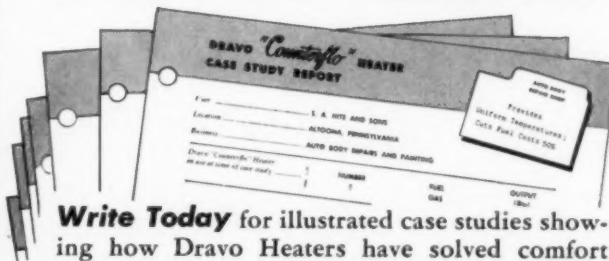
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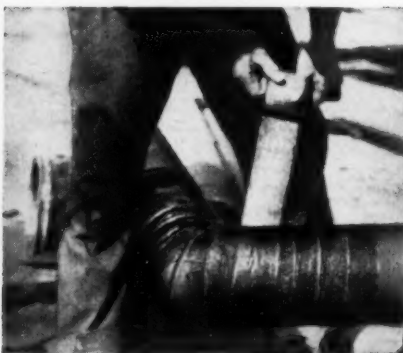
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## REQUIRED READING

(Continued from page 303)

### WILLIS HAVILAND CARRIER

*Willis Haviland Carrier, Father of Air Conditioning.* By Margaret Ingels. Country Life Press (Garden City, N.Y.) 1952. 5¾ by 8½ in. 170 pp., illus.

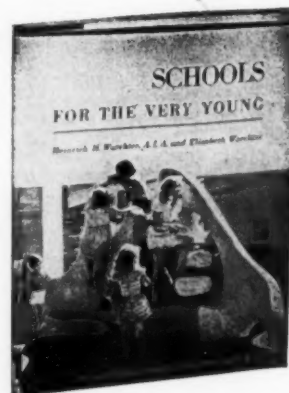
ALMOST as long as the history of man's building, is that of his effort to control enclosed atmosphere and rid himself of the discomfort of hot, humid air. In 1902, with the completion of drawings for equipment designed to control humidity as well as temperature, he succeeded in developing the first real air conditioning system.

Much of the half century that separates this first system from that recently installed in the United Nations Secretariat, is the story of the inventive genius of Willis Haviland Carrier. It is also the chronicle of the founding of an industry, and, more specifically, that of the company that bears his name. Carrier designed the first system a year after his graduation from Cornell. Nine years later, in 1911, he presented his paper, "Rational Psychometric Formulae," at the annual meeting of the American Society of Mechanical Engineers. Questioning the accuracy of generally accepted psychometric data based on an empirical formula, he proposed new psychometric formulae based on principles reasoned out theoretically and then proved by practical demonstration. After the publication of this paper, the control of air was accepted as a branch of engineering and his "Formulae" as the authoritative basis for fundamental calculations in the air conditioning industry. In 1915 Carrier and six other young engineers started the Carrier Engineering Corporation. By 1930 Carrier air conditioning had invaded the railroads and was to be found in theaters, plants, hospitals, offices and homes; by 1939, with his invention of the Conduit Weathermaster System, Willis Carrier provided a very practical method to bring air conditioning to the skyscraper. During World War II he designed what he considered his greatest engineering achievement—a system to simulate freezing high-altitude conditions for the testing of prototype planes.

Margaret Ingels brings to the book the technical knowledge and interpretation of her own engineering career as well as 33 years of close working association with Dr. Carrier.

## Schools for the Very Young

by HEINRICH H. WAECHTER, A.I.A.  
and ELISABETH WAECHTER



THOUGH many volumes have been written about school design, "Schools for the Very Young" is — so far as we know — the first in which an architect and a child educator have collaborated to provide an up-to-date treatise on the requirements of the particular type of school demanded for the proper training of the very young child.

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